

AMERICAN GAS ASSOCIATION MONTHLY

APRIL • 1935

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•

Refrigerator Sales Contest

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Distribution Conference Program



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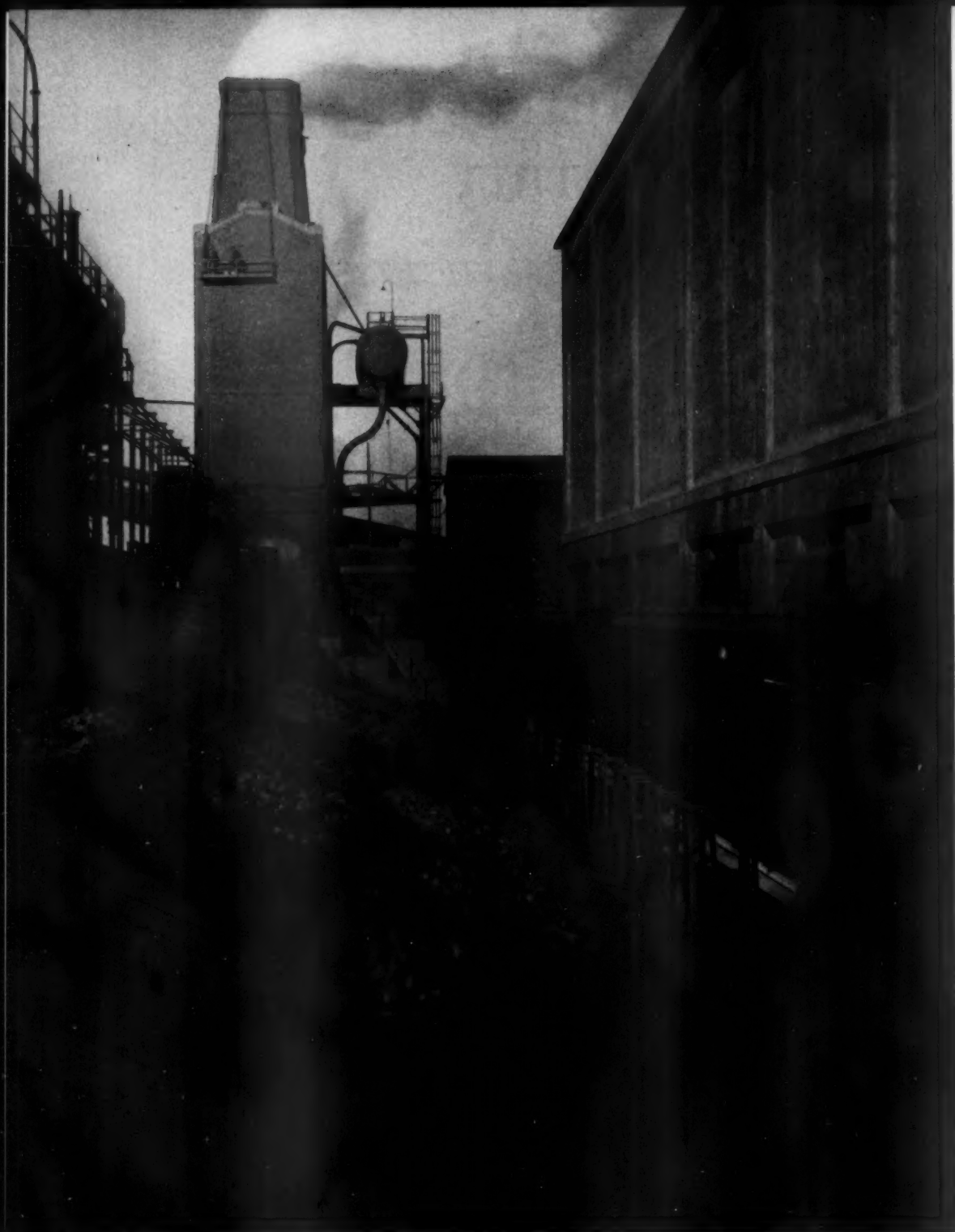
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*Coke Removal
at a Modern Gas Plant*

AMERICAN GAS ASSOCIATION MONTHLY

James M. Beall, Editor

Stage Set for Natural Gas Convention

LEADERS of the natural gas industry from all parts of the country are expected to take part in the convention of the Natural Gas Department of the American Gas Association, to be held in Memphis, Tennessee, May 6-9. Greater efforts than ever are being put forth to make this, the first separate convention of the department since 1932, the most outstanding meeting of natural gas men in many years.

The program, which is nearly complete, promises to be one of the most worthwhile yet attempted. Acceptances have been received from many men in the forefront of the industry and a diversified and well-rounded program is assured. A conspicuous innovation, and one expected to be productive of good results, is the setting aside of two afternoons for simultaneous group meetings to study and discuss problems peculiar to special divisions in the industry.

R. W. Gallagher To Speak

The first general session of the convention is to be held Monday afternoon, May 6, starting at 2 o'clock. At this session two of the most pressing problems of our times, namely, taxation and legislation, will be discussed by R. W. Gallagher, of the Standard Oil Company of New Jersey. Mr. Gallagher's address is expected to be one of the high lights of the meeting. His remarks carry added weight in

view of the fact that he was chairman of the Natural Gas Department in 1927 and president of the American Gas Association in 1932.

In addition to the address of the Chairman, John B. Tonkin, of the Peoples Natural Gas Company, Pittsburgh, Pa., the first session will include talks by Percy S. Young and Major Alexander Forward, president and managing director respectively of the American Gas Association.

Technical Subjects

Tuesday morning, May 7, will be a general session devoted to technical subjects of widespread interest. Included on this program is a paper on "Developments in Gas Discovery from the Peach Sprout to the Seismograph." A feature of the next general session, Wednesday morning, will be an address by Dr. John W. Finch, director of the United States Bureau of Mines. Other subjects to be covered at this session are "The Need and Justification of Natural Gas Reserves and Conservation Thereof," and "Improvements in Gas Transmission." Both of these topics will be discussed from various angles by several speakers.

"Gas Air Conditioning to Date," an address by George M. Parker, Mississippi River Fuel Corporation, St. Louis, will be presented during the closing general session, Thursday morning. The recent introduction of a new gas air conditioning unit on the

market and the great public interest in this subject make it one of the most important to be presented during the entire convention. Four men from different sections of the country will discuss Mr. Parker's paper. Natural gas fellowships and educational progress in gas engineering will also be discussed at this session. The meeting will conclude with prepared papers on "Whole Organization Attention to Sales," and a general discussion of the subject of sales.

Group meetings, which have been divided under two general headings, Sales, Distribution and Utilization in one, and Production and Transmission in the other, will be held Tuesday and Wednesday afternoon. Subjects both of a technical and non-technical nature will be discussed at these meetings. Program leaders are as follows: Production—R. W. Hendee, chairman, and Don Wilson, vice-chairman; Transmission—Elmer F. Schmidt, chairman, and John Clark, vice-chairman; Sales—W. W. Winter, chairman, and J. V. Strange, vice-chairman.

The Convention City

All sessions will be held at the Hotel Peabody which will be striving to live up to its advertising claim of "the South's finest and one of America's best." Other fine hotels are conveniently located for those who will be in attendance. Advance registrations are heavy and delegates are



Hotel Peabody, Memphis, where all convention business sessions will be held

urged to make their hotel reservations early.

Old timers consider Memphis one of the leading convention cities in the country. The last natural gas convention held there in 1931 attracted a record-breaking crowd and was acclaimed one of the most successful ever held. Hotel accommodations are only one of the many reasons for Memphis' popularity. Those who attend the convention will soon discover the rest.

Natural gas was first introduced into Memphis January 1, 1929. The pipe line is owned and operated by the Memphis Natural Gas Company. The line gets its supply from the Monroe fields in Louisiana, is 210 miles long, 18 inches in diameter; and, operated at a pressure of 300 pounds, makes available to Memphis approximately 60 million cu.ft. of natural gas daily. Gas is delivered at the city gate by the Memphis Natural Gas Company to the Memphis Power and Light Company which distributes it in Memphis.

Prior to the introduction of natural gas, the local company distributed manufactured gas and it is interesting to note that manufactured gas was first distributed in Memphis in 1852.

Following is the tentative program:

MONDAY AFTERNOON

May 6, 1935—2:00-5:00

Opening Remarks by the Chairman, John B. Tonkin.

Invocation.

Introduction of the Mayor of Memphis, W. J. O'Brien, Memphis Power and Light Company, Memphis.

Address of Welcome, Mayor of Memphis.

Chairman's Address, J. B. Tonkin, Peoples Natural Gas Company, Pittsburgh.

Address, Percy S. Young, President, American Gas Association.

Review of Association Work, Alexander Forward, American Gas Association.

Taxation and Legislation, R. W. Gallagher, Standard Oil Company of New Jersey, New York.

Report of Program Committee, A. E. Higgins, Secretary, Natural Gas Department, Dallas.

TUESDAY MORNING

May 7, 1935—9:30-12:00

GENERAL SESSION ON TECHNICAL MATTERS OF GENERAL INTEREST

H. C. Cooper, Chairman

Appointment of Committee on Final Resolutions, J. B. Tonkin, Chairman.

Report of Main Technical and Research Committee and Subcommittees, H. C. Cooper, Hope Natural Gas Company, Pittsburgh.

Discussion.

Developments in Gas Discovery from the Peach Sprout to the Seismograph.

Discussion.

Pressure Piping Code of the A. S. M. E., H. D. Hancock, Henry L. Doherty and Company, New York.
Discussion.

WEDNESDAY MORNING

May 8, 1935—9:30-12:00

GENERAL SESSION

Bureau of Mines, Dr. John W. Finch, United States Bureau of Mines, Washington, D. C.

The Need and Justification of Natural Gas Reserves and Conservation Thereof, Ralph E. Davis, Ralph E. Davis, Inc., New York; R. E. Wertz, Amarillo Gas Company, Amarillo; H. A. Wallace, United Fuel Gas Company, Charleston; A. F. Bridge, Southern Counties Gas Company, Los Angeles.

Discussion.

Improvements in Gas Transmission to Include Compressor Stations, H. J. Carson, Northern Natural Gas Co., Omaha; J. L. Foster, Lone Star Gas Company, Dallas; A. L. Forbes, Jr., Western Gas Company, El Paso.

THURSDAY MORNING

May 9, 1935—9:30-12:00

GENERAL SESSIONS

Wrinkles, H. J. Hoover, Natural Gas, Cincinnati.

Natural Gas Fellowships and Educational Progress in Gas Engineering, J. B. Tonkin, Peoples Natural Gas Company, Pittsburgh; Robert I. Snyder, Natural Gas Fellow, West Virginia University, Morgantown; Kermit J. Sonney, Natural Gas Fellow, University of Oklahoma, Norman.

Gas Air Conditioning to Date, George M. Parker, Mississippi River Fuel Corporation, St. Louis.

Discussion, W. Jennings Young, Oklahoma Natural Gas Company, Tulsa; E. A. Jones, L. J. Mueller Furnace Company, Milwaukee; Frank H. Adams, Surface Combustion Company, Toledo; James C. Patterson, Bryant Heater Company, Cleveland.

Whole Organization Attention to Sales, E. M. Tharp, Ohio Fuel Gas Company, Columbus; S. B. Severson, Republic Light Heat and Power Company, Buffalo.

Discussion.

TUESDAY AFTERNOON

May 7, 1935

SALES AND UTILIZATION

W. W. Winter, Chairman
J. V. Strange, Vice-Chairman

Corrosion as It Pertains to City Plants, Charles F. Turner, East Ohio Gas Company, Cleveland.

Discussion, E. A. Munyan, Union Gas and Electric Company, Cincinnati.

Modern Methods of Meeting Competition, W. W. Winter, Atlanta Gas Light Company, Atlanta.

Discussion, H. A. Meade, New Orleans Public Service Inc., New Orleans; C. E. Dougherty, Chattanooga Gas Company, Chattanooga; H. G. Bonner, Knoxville Gas Company, Knoxville; L. O. Gordon, Peoples Light and Power Company, New York.

Gas Hairdryers, C. K. Patton, Dallas Gas Company, Dallas.

Discussion, C. B. Wilson, Little Rock Gas and Fuel Company, Little Rock; D. A. Strickland, United Gas Public Service Company, Houston.

TUESDAY AFTERNOON

May 7, 1935—2:00-5:00

GAS PRODUCTION

R. W. Hendee, Chairman
Don Wilson, Vice-Chairman

"Control of Gas Wells": Bottom Hole Chokes, H. C. Otis, Southern States Company, Dallas.

Discussion, J. H. Dunn, Lone Star Gas Company, Dallas; B. N. Nowery, United Gas Public Service Company, Houston.

Directional Drilling and Its Control, H. John Eastman, Eastern Oil Well Survey Company.

Discussion, H. P. George, Southern California Gas Company, Los Angeles.

Gas Storage, P. D. Mellon, Canadian Western Natural Gas Light, Heat and Power Company, Calgary, Canada; E. L. Rawlins, United States Bureau of Mines, Bartlesville; Paul Sticelbar, Central States Power and Light Company, Tulsa; M. W. Walsh, Louisville Gas and Electric Company, Louisville.

Modern Cementing Practices, C. P. Parsons, Halliburton Oil Well Cementing Company, Duncan; A. W. Leonard, Devonian Oil Company, Tulsa.

WEDNESDAY AFTERNOON

May 8, 1935—2:00-5:00

SALES, UTILIZATION AND DISTRIBUTION

W. W. Winter, Chairman
J. V. Strange, Vice-Chairman

Gas Engines for Power, W. J. Briggie, Jr., Lone Star Gas Company, Dallas.

Discussion, E. J. Stern, Atlanta Gas Light Company, Atlanta; E. D. Milener, American Gas Association, New York.

Modern Advertising for Sales, J. C. Barnes, New Orleans Public Service Inc., New Orleans.

Discussion, C. D. Greason, Gas Service Company, Kansas City; D. M. Buckler, Southern California Gas Company, Los Angeles; Legare Davis, Atlanta Gas Light Company, Atlanta; W. C. Grant, Lone Star Gas Company, Dallas; W. G. Wiegel, Lone Star Gas Company, Dallas.

Dealer Cooperation, A. E. Higgins, American Gas Association, Dallas; F. M. Banks, Southern California Gas Company, Los Angeles; M. L. Capp, Oklahoma Natural Gas Company, Tulsa.

WEDNESDAY AFTERNOON

May 8, 1935—2:00-5:00

TRANSMISSION, INCLUDING COMPRESSOR STATIONS

Elmer F. Schmidt, Chairman
John Clark, Vice-Chairman

Corrosion, Pertaining to Internal and External, Group Argument.

Dehydrating Natural Gas.

Discussion.

Compressor Stations.

The committees are as follows:
General Arrangements Committee: W. J. O'Brien, Chairman, Memphis Power and Light Company, Memphis; B. C. Adams, Gas Service Company, Kansas City; Logan Cary, Consolidated Gas Service Company, Oklahoma City; F. L. Chase, Lone Star Gas Company, Dallas; J. D. Creveling, Henry L. Doherty and Company, New York; H. L. Dickerson, Electric Bond and Share Company, New York; Edgar G. Hill, Ford, Bacon and Davis, New York; F. W. Insull, Public Service Company of Oklahoma, Tulsa; C. G. Laskey, Southwest Gas Utilities Company, Shreveport; William Moeller, Jr., Southern California Gas Company, Los Angeles; D. C. Shaffer, Memphis Natural Gas Company, Memphis; W. W. Winter, Atlanta Gas Light Company, Atlanta; W. S. Yard, Pacific Gas and Electric Company, San Francisco.

Program Committee: J. B. Tonkin, Chairman, Peoples Natural Gas Company, Pittsburgh; R. E. Aitcheson, Sapulpa Gas Company, Sapulpa; F. H. Brooks, Northern Natural Gas Company, Omaha; F. C. Brown, Natural Gas Pipeline Company of America, Chicago; H. C. Cooper, Hope Natural Gas Company, Pittsburgh; C. C. Cragin, Western Gas Company, El Paso; R. E. Fisher, Pacific Gas and Electric Company, San Francisco; R. W. Hendee, Oklahoma Natural Gas Company, Tulsa; N. C. McGowen, United Gas Public Service Company, Houston; R. K. Osborn, State Fuel Supply Company, Oklahoma City; B. F. Pickard, Central States Power and Light Company, Tulsa; E. L. Rawlins, United States Bureau of Mines, Bartlesville; F. F. Schauer, Equitable Gas Company, Pittsburgh; Frank Smith, Houston Natural Gas Company, Houston; R. G. Soper, Dallas Gas Company, Dallas; J. V. Strange, United Gas Public Service Company, Houston; T. J. Strickler, Kansas City Gas Company, Kansas City; C. I. Weaver, Columbia Gas and Electric Company, Columbus; George E. Welker, United Natural Gas Company, Oil City; R. E. Wertz, Amarillo Gas Company, Amarillo; D. C. Williams, Kay County Gas Company, Ponca City.

Publicity Committee: Paul Renshaw, Chairman, Memphis Power and



Skyline of Memphis from the Arkansas side of the Mississippi River

Light Company, Memphis; J. C. Barnes, New Orleans Public Service Inc., New Orleans; Douglas Buckler, Southern California Gas Company, Los Angeles; R. J. Daugherty, Gas Service Company, Bartlesville; Legare Davis, Atlanta Gas Light Company, Atlanta; H. E. Feister, United Gas Public Service Company, Houston; Lester Moore, Arkansas Natural Gas Corporation, Shreveport; C. D. Grea-son, Gas Service Company, Kansas City; W. C. Grant, Lone Star Gas Company, Dallas; A. C. Joy, Pacific Gas and Electric Company, San Francisco.

Hotel Committee and Entertainment Committee: J. J. Brennan, Chairman, Memphis Power and Light Company, Memphis.

Elected Vice-President

F H. RIGGS has been elected vice-president and director of the Amherst Fuel Company, Charleston, W. Va., effective February 26, according to an announcement by Herbert E. Jones, president.

To Teach Natural Gas Course



R. C. Mitchell

A PPOINTMENT of R. C. Mitchell as the first instructor for the Home Study Course on Natural Gas has been announced by the University of Kansas. Mr. Mitchell will carry on his duties under the personal supervision of Professor C. M. Young, author of the course.

A graduate of the School of Engineering of the University of Kansas, Mr. Mitchell has had several years' experience as an oil and gas engineer and for six years was with the Standard Oil Company of New Jersey in India and South China. He assumes his new position following a broad experience which provides a useful background for his work of examining and grading the papers of the Home Study Course and submitting to enrolled students helpful suggestions of a practical nature.

Sponsored jointly by the American Gas Association and the University of Kansas, the Home Study Course on Natural Gas is meeting with strong support.

Meritorious Service Medal To Be Awarded for Heroic Act



IN 1923 the American Gas Association, through the generosity of the late Walter R. Addicks, senior vice-president of the Consolidated Gas Co. of New York, set up an award to be made annually to the individual adjudged to have performed the most meritorious service to the industry. Continuation of this award was made possible by Mr. Addicks' widow, Mrs. Margaret Jardine Addicks, who, at her death, bequeathed a sum sufficient to guarantee in perpetuity the American Gas Association Meritorious Service Medal. This year applications for this award must be filed with Association Headquarters, 420 Lexington Avenue, New York City, before August 1, 1935.

The award is in the form of a gold medal, beautifully designed, and is one of the most coveted honors within the gift of the Association. It is given only for the most meritorious act during a twelve-month

period, and, to date, only seven men have had it bestowed upon them. They are:

1924—Patrick Augustine Gubbins, Consolidated Gas Co. of New York.

1925—Timothy Dwyer, Cambridge Gas Light Company, Cambridge, Mass.

1926—Henry F. Ketz, Southern Counties Gas Company, Santa Barbara, Calif.

1927—Harry Lang, Northern Union Gas Company, New York, N. Y.

1930—Jesse Adams Harvey, The Empire Gas & Electric Company, Geneva, N. Y.

1931—Frank E. Steinhardt, Consolidated Gas Company of New York. Posthumous award.

1932—William Earl Tracy, Kansas City Gas Company, Kansas City, Mo.

The American Gas Association Meritorious Service Medal is available to employees of all manufactured and natural gas company and manufacturer company members. The next presentation, it is expected, will take place at the Seventeenth Annual Convention of the Association, at Atlantic City, during the week of October 14. It will recognize some deed performed during the period from July 1, 1934, and June 30, 1935.

Acts for which the Meritorious Service Medal is awarded include meritorious and conspicuous judgment, intelligence, or bravery in saving life, either in the plant or works of any gas undertaking or having to do with the handling of materials of manufacture or of the products manufactured or distributed. Any loyal citizen, without regard to age, sex, race, religion or political affiliation is eligible for this award.

Names of persons deemed eligible for consideration should be forwarded to the Association.

Economy in New Equipment

FIRST of all, let it be said that we do not want to be embroiled in any discussion on the respective merits of gas, electricity or oil as restaurant fuel. Nevertheless, surveys show that gas predominates as a fuel for the preparation of food in a majority of restaurants. Likewise, we know the cost—no matter what fuel is used—is important to every restaurateur attempting to operate at maximum efficiency—and with a profit.

That being the case, restaurateurs who use gas might well investigate the innovations in the new ranges being shown by nationally known manufacturers. The withdrawal from the market of the "hand made" range, a product of restaurant equipment concerns, has enabled the large, specialized manufacturers to adopt higher standards for scientific and efficiently planned units under the sponsorship of the American Gas Association and with the approval of the American Standards Association. It is reported that new installations of insulated, thermostatically controlled gas ranges have resulted in reductions of bills from 20 to 60 per cent, a saving that permits the amortization in a short period. Naturally, the decreased operating expenses should result in increased profits.

We don't expect economical operation from an automobile that is worn out or is obsolete in design. In fact, we usually find it more economical, after a car has been used for a very few years, to replace it with a new model. The same theory of reasoning that prompts the purchase of a new automobile should be applied to restaurant equipment, especially when outstanding advances have been made to bring about more efficiency.—National Restaurant Bulletin, March, 1935.



Natural gas pipe line suspension bridge over Missouri River

The Economics of Gas Fuel

IN the final analysis, gas is only another source of energy. Coal, oil, electricity, and gas are all sources of energy in one form or another. Their value to the public lies not in themselves. It lies solely in the manner in which their inherent energy is applied to useful work. Because of this fact each of these sources of energy has its own place in the economic and social system.

There are certain applications in which each fuel is superior, and cannot be replaced readily. There are other applications where two or more of these fuels may perform equally well and hence competition may exist.

Elements of Cost

An examination of the functions of the gas industry from this viewpoint will disclose the strength of its position in certain applications and the folly of attempting to displace it by any other known fuels.

In approaching an examination of the gas industry from this viewpoint, the elements of cost cannot be ignored. These will fall into three general classifications: Production, transmission, and distribution.

Because of widely different conditions—such as density of population, distance from sources of raw material,

cost of competitive fuels, market development, load factors, and innumerable other important elements—it is impossible to set up figures which re-

This article is reprinted by special permission from the March 30 issue of "Gas Age-Record" and is representative of the factual information and economic interpretation found in the 14 chapters of this unusual presentation of the gas industry.

The first chapter of this special issue of "Gas Age-Record" is in the form of an open letter to the American public, summarizing the contents which follow and stressing the large part which the gas industry can play in national recovery.

"The Economics of Gas Fuel" is the second article, and the remaining 12 chapters have the following headings: How Gas Lights Blazed a Path for a Modern Fuel Industry. What Gas Companies Represent as Assets to the Nation. Who Owns the Gas Companies? The Present Status of Gas Companies. Is the Gas Industry Actually Depression-Proof? The American Gas Association Helps Serve the Public. How Gas Consumers Help Pay the Utility's Tax Bill. Fair Value of Gas Companies and Its Effect on Rates. What Price Gas? The Holding Company, and Why It Must Be Retained. Gas Appliance and Equipment Manufacturers Carry On. What Is the Future for Gas Fuel?

Copies of this special issue are available from the Robbins Publishing Company, Inc., 9 East 38 Street, New York.

flect any typical condition. There is no average gas company or average market.

Hence, for the purposes of this discussion, the fundamental elements of cost shall be considered with the principles involved. No attempt will be made to establish definite figures, and ratios alone will be considered in drawing conclusions.

The gas industry has two distinct branches: Manufactured gas and natural gas.

Manufactured Phase

Manufactured gas is made from coal or oil, generally in the city in which it is distributed. It is made by heating the coal or oil, thus releasing the light gases contained in these heavier fuels, or by introducing steam on a hot bed of coal or coke, both of which break down and react chemically to produce other gases.

These gases are then passed through scrubbers, coolers, and purifiers to remove solid particles of carbon, tars, and undesirable sulphur, and are sent on to the holders for storage and ultimate use by the consumer. In this process very little waste occurs. The solid and liquid residue from the coal is extracted and sold as coke, tar, and other by-products.



Laying a 26-inch pipe line through rough country

Of the total heat energy in the original base fuel and the steam, approximately 75 to 90 per cent will be recovered in the form of gas and by-products. This compares more than favorably with electricity produced by the generation of steam. The most modern power plant, operating the most efficient turbines, has an over-all efficiency of not more than 30 per cent from the raw coal in the boilers to the electricity on the switchboard.

Thus, from the standpoint of production efficiency and conservation of natural resources utilized in production, manufactured gas has a distinct social advantage over electricity.

Important to the economic phase of production methods is the investment required. It is obvious that any production process must be capable of meeting whatever loads are imposed on it. A plant which failed to have gas ready when the public wanted it wouldn't be of much use to the community. Neither would a power plant be of much benefit if it didn't have electricity available when the customers required it. For this reason, both gas and electric companies have to build plants capable of meeting the maximum or peak requirements.

In this respect, gas holds a tremendous advantage over electricity.

Peak loads in both the gas and electric business are matters of minutes or sometimes seconds. That is, the real maximum demand lasts only a very

short period of time. Nevertheless, facilities must be provided for this momentary peak, or service will fail.

Expensive Peaks

In the electrical industry, this maximum capacity must be provided in expensive generating equipment because there is no known means of storing electrical energy economically. Thus, an investment must be made in boilers and generators to meet this peak demand. The interest, depreciation, taxes, and other fixed charges continue on this equipment even though it is used only a few minutes each year.

Such losses are unknown in the gas business because gas can be stored in large containers which cost materially less than production capacity. By this means, production can be carried on continuously throughout the day and the peak loads which occur only occasionally are met by drawing gas from the storage containers or holders.

From these facts it is evident that a materially larger investment will be required for production capacity if electricity is to serve a given market than would be required if manufactured gas were available.

Thus, manufactured gas holds a decided economic advantage over electricity from the standpoint of efficiency of production methods and investment required to serve a given market.

Stated in other words, the cost of a given unit of energy in the form of

manufactured gas in the holder is less than the same unit of energy in the form of electricity on the switchboard.

The proof of this statement is evidenced by one simple explanation. The lowest block on the TVA electrical rate to Tupelo, Miss., is two mills per kilowatt hour. Now one kw.hr. contains 3,412 British thermal units of energy.

There are 530,000 B.t.u.'s in 1,000 cu.ft. of 530 B.t.u. manufactured gas. Thus, one M cu.ft. of this gas contains as much energy as 155 kw.hr. of electricity.

Thus, one M cu.ft. of 530 B.t.u. gas is worth as much as 155 kw.hr. At two mills per kw.hr. this one M cu.ft. of manufactured gas is worth 31 cents.

This is practically the cost of producing one M cu.ft. of 530 B.t.u. manufactured gas. Thus, it can be said that the cost of producing manufactured gas is equivalent to the cost of electricity under the lowest block of the lowest known wholesale rate in the United States and is materially less than the average cost of electricity under this rate.

It must be remembered that in neither case do these charges provide for the fixed costs on the investment which have been shown to be materially less for manufactured gas than for electricity.

With natural gas a new set of economic factors arises to be considered. Natural gas is a product of nature. It



Where barriers are ignored



Miles of pipe running into thousands

is found where it exists in fields without regard to available or convenient markets.

Yet, natural gas has no value until a market can be found. This may be close at hand or it may be many miles distant.

Transportation Factors

Whether or not it is economic to transport natural gas to any market is a question involving many factors, such as permanency of supply, proven area, rock pressure, nature of terrain to be crossed, potential market, cost of competitive fuels, and various other elements.

However, when these factors are all summarized and conclusions are drawn, the fact remains that natural gas can be transported only to those markets where it can economically replace some portion of the manufactured gas. In other words, the delivered cost of natural gas must be less than the production cost of at least part of the manufactured gas before a natural gas pipe line can be justified.

Experience has proved that this condition can be met after transporting natural gas 1,000 miles from its source of supply. With improved equipment and methods it is undoubtedly possible to extend this distance even further.

Thus, it can be said that the cost of natural gas in the holders of any city must be less than the cost of producing

a like quantity of energy in the form of manufactured gas.

As it has been shown that the cost of producing energy in the form of manufactured gas is less than the cost of producing a like quantity of energy in the form of electricity, it obviously follows that energy in the form of natural gas costs even less.

In 1931 C. C. Brown, gas and electric engineer for the Railroad Commission of the State of California, gave an interesting comparison between the cost of transmission of gas and electricity. By comparing the direct operating and fixed charges on a double-circuit, steel tower, electric transmission line 262 miles long and with a maximum transmission capacity of 284,400 kilowatts, with the same charges on a welded-steel, natural gas transmission line 283 miles long and with a maximum transmission capacity of 75,000,000 cu.ft. per day (both actual installations in California), he found that the cost of transmitting 1,000,000 horsepower hours of energy in the form of gas was \$65 while the cost of transmitting the same amount of energy in the form of electricity was almost three times as much, namely, \$190. The gas line cost \$7,027,395 and the electric line \$7,211,000.

Distribution Costs

It has been conclusively shown that gas in the city holders ready for delivery to the mains is more economical

than electricity at the switchboard ready for delivery to the lines.

Before either source of energy is delivered to the customer it must pass through the distribution system. In the case of gas this includes numerous underground pipes, regulators, and meters, all of which must be kept in a state of repair capable of rendering complete, continuous service. In the case of electricity the distribution system consists of overhead or underground wires, transformers, and meters. These, too, must be continually maintained and repaired in order to provide service.

There must be an investment made in this original equipment which incurs interest charges, taxes, depreciation, and other fixed expenses. There must also be incurred annual expenses for maintaining this equipment and keeping it in working order.

Volumes have been written on the subject of establishing a yardstick with which to measure distribution costs, and still the problem remains unsolved.

This continuing controversy is not surprising in view of the numerous factors which necessarily enter into such a computation. Conditions cannot be identical at all places and hence a standard measure of performance can never be established.

Suffice it to say that in the case of both gas and electricity the unit cost of distribution is dependent upon the volume of energy sold. Distribution



"Backbone" equipment in long-distance transmission of gas

costs per unit decline as sales increase, and vice versa.

Gas Has Advantage

In this connection it may be well to point out that the average consumption of gas for all purposes amounted to approximately 70,000,000 B.t.u.'s per customer during 1934, while the average consumption of electricity for all purposes amounted to approximately 10,000,000 B.t.u.'s per customer during the same year.

This would indicate that the distribution cost per unit of energy is much less with gas than with electricity because of the greater quantity distributed.

Perhaps the proof or disproof of this statement is more likely to be found in a comparison of gas and electric retail rates. After all, these rates represent the total cost of service plus the anticipated profits. Hence they should be a fair measure of value.

The TVA has approved a retail electric rate for Tupelo, Miss., as follows:

Amount Used Per Month	Rate Per Kw.Hr.
First 50 kw.hr.	3c
Next 150 kw.hr.	2c
Next 200 kw.hr.	1c
All over 400 kw.hr.	0.4c

As this is one of the lowest electric rates in the country, it is fair to compare it with one of the lowest gas rates in the country. For this purpose, the gas rates of Amarillo, Tex., where natural gas is served, can well be used.

The Amarillo rate for natural gas is as follows:

Amount Used Per Month	Rate Per MCF
First 30 MCF	30c
Next 170 MCF	20c
Next 2,000 MCF	16c
Next 5,000 MCF	12.6c
Next 10,000 MCF	11c
Next 15,000 MCF	10c
All additional MCF	8c

Prompt payment discount—10 per cent on first 2,200 M cu.ft. only.

Promoting the Better Housing Program



Billboards used by the Amarillo Gas Company, Amarillo, Texas

Now we must, of course, convert these rates into identical units of energy. This can be done by using 3,412 B.t.u.'s for one kw.hr. and 1,000,000 B.t.u.'s for each M cu.ft. of natural gas.

On this basis we find that energy costs are as follows:

Energy Used Per Month— B.t.u.'s	Cost of Electricity Tupelo Rate	Cost of Gas Amarillo Rate
1,000,000	\$ 5.44	\$.30
2,000,000	7.25	.60
5,000,000	10.76	1.50
10,000,000	16.61	3.00
20,000,000	28.31	6.00
100,000,000	121.91	23.00
500,000,000	589.91	91.00
1,000,000,000	1,176.91	171.00

It is thus apparent that electricity, when sold on an approved TVA rate, costs from 5 to 18 times as much as gas sold on a comparative rate when the two fuels are reduced to a common energy denomination.

It may be contended that this comparison is unfair because it takes the extremes with both gas and electricity,

First 400 cu.ft. per mo.	\$0.50
Next 6,600 cu.ft. per mo.85 per MCF
Next 13,000 cu.ft. per mo.80 per MCF
Next 80,000 cu.ft. per mo.75 per MCF
Next 100,000 cu.ft. per mo.70 per MCF
Next 1,800,000 cu.ft. per mo.65 per MCF
Next 3,000,000 cu.ft. per mo.55 per MCF
All additional cu.ft. per mo.50 per MCF
Discount 10c per MCF.	

and examines two widely separated companies with vastly different local conditions.

Another Comparison

In order to correct for such a criticism, let us choose a middle western city in which the gas and electric utilities are owned by two different parties and hence are truly competitive. We can expect a fair condition to exist in the city of Milwaukee, Wis., where the utilities are controlled by a state commission formerly headed by David Lilienthal, now head of the TVA.

In the city of Milwaukee the rate for a domestic customer using electricity in a six-room home is as follows:

	Per Kw.Hr.
First 27 kw.hr. per month	6.5c
Next 120 kw.hr. per month	3c
All over 150 kw.hr. per month	2c
Discount 5 per cent up to \$25.00	
—1 per cent thereafter.	

In this same city, manufactured gas having a heat content of 520 B.t.u.'s per cu.ft. is supplied under the following rate:

(Continued on page 144)

E. R. Acker on Gas Competition*

An Interview by
EARL WHITEHORNE



E. R. Acker

EVER since the gas and electric companies got married there has been a dispute in the family. There was a time when these two were just on their own and each had a tidy little lighting business. Then the Welsbach mantle was invented and began to run the carbon incandescents ragged. Whereupon the "Mazda" lamp was quickly developed and chased the gas lights right out the back door. At which point the bankers stepped in and forced a shotgun wedding and told these two utilities to settle down together and be good.

The gas companies took the cooking business. But twenty years ago the electric range appeared and the argument started. Should combination companies sell electric cooking in competition with their own gas load? Should the banker, interested in both utilities, permit this raid upon his gas investment? The answer has been generally—"No!"

Because of the pressure now on the power companies to reduce rates, cooking and water heating load has become vital. And this being open season for soul searching in the industry, the other day I looked in on E. R. Acker, president of the Central Hudson Gas & Electric Corporation, and put the question up to him. The Central Hudson Company serves Poughkeepsie, Newburgh, Kingston, up and down the valley. It is a tight little property that has done a fine operating job and pioneered in load development. I asked him whether he thought that we are headed for the eventual separation of all gas and electric companies as the practical solution for this growing competition or whether it can be worked out in combination?

"We have given a great deal of thought to that question in our company and have, in fact, made a number of studies of the future of the gas and electric business in our territory with that in mind. We can find only

one answer. We believe that the relationship between gas and electric service must be ultimately determined in the interest of the customer.

"This may sound trite, but it goes deeper than that. No industry has been able for long to ignore the welfare of its customers and prosper. It would be unfortunate, therefore, if any separation of gas and electric properties should interfere with the balancing of these two services in the interest of the customer, through the introduction of commercial competition under which each service would try to get the business without regard to which might be most economic.

Economic Balance Sought

"So it has been our purpose to develop a complete combination utility service for our customers which would reach as large a portion of our market as possible. In one of our major city districts we analyzed the cost of serving our entire gas-cooking and water-heating load by electricity and found that there would be no economic benefit to the customer even with a lower rate for larger consumption. Based on these studies, we recommend to our customers gas for

cooking, water heating and house heating and electricity for lighting, refrigeration and other household appliances.

"These combination services can be purchased by our customers under our budget billing plan at a flat amount per month subject to adjustment up or down to actual consumption at the end of the year. For complete use of electricity, including refrigeration, cooking and water heating, the customer can purchase his entire requirements at about 2.4 cents per kilowatt-hour. We do not merchandise ourselves, but promote the use of both gas and electric appliances, retailed through dealers, and guide our customers to the most economical combination in each case. This appears to me to be the most practicable arrangement for all concerned.

"We are not gravely concerned over the conflict between gas and electric services. Oil and bottled gas competition is a more serious problem for the gas business in our opinion than the growth of electric cooking. But electric competition is creating great pressure in the gas industry for improvement in appliances and in manufacturing and distribution processes. Great progress is being made which the electric man cannot overlook. He cannot fairly compare *future* electric rates with *present* gas rates. New developments are bound to come, which, in my opinion, will result in reduced rates and preserve the economic balance between the two services."

In the Central Hudson country for years they have been developing both services in parallel. They have brought rates down for both gas and electricity at about the same time and not let either lag behind. They have done this, Mr. Acker says, not just to avoid upsetting the balance, but because they have been steadily improving both services. They do not fight one against the other, but both against the outside competition, and they have taken advantage of every opportunity to increase efficiencies in both departments.

* Reprinted from "Electrical World," February 16, 1935.

"No, I don't see it," Acker concluded. "To the contrary, I see a close co-ordination of gas and electric service ahead, through the use of electric controls on gas ranges and water heaters, just as we now have on house heaters. I believe that the efficiency and convenience of gas ap-

pliances is going to be greatly improved in this way, and that this will bind the two services steadily closer together. The real job for the combination companies is not separation, but the elimination of duplicate expense in serving the customer. And this also argues for joint operation."

Some Echoes of the Southern Gas Meeting

"In my 33 years in this business I have never seen a time when there was not trouble. It takes good men to meet trouble. Today there is a wave of attack upon the utilities. The theory seems to be that because some few persons misused power and a few resorted to fraud, all utilities should be put in the straight-jacket. There is a passage in the Bible to the effect that God would not destroy Sodom and Gomorrah if one righteous man could be found; but the theory today seems to be to destroy the industry if one crook could be found.

"Naturally, improvements can come from changes that are tested, but it is not conceivable that everything—the result of thousands of years of experience—is going to be changed. We need clear, keen thinking, courage to face facts as they are, and patience."

—L. B. Denning, vice-president,
American Gas Association.

"If we are willing to get down to work, rely on ourselves alone, quit depending on anybody—the government or anybody else—to protect us, apply the same business rules to ourselves that other businesses have always had to apply or go out of business, cut loose from the idea that because we are utilities there is something sacred about us and our profits, we need not fear all the competition the government is liable to offer—or that anybody else may have to offer. The gas industry has got to clean house and strip for action."

—W. W. Winter, vice-president,
Atlanta Gas Light Co.

"While we are in merchandising up to our necks, we must not forget, as already suggested, that a utility advertising department always has on file a host of demands that have nothing to do directly with merchandise advertising. As testimony of this, I list just a few burning questions on our desk at present: A campaign on taxation; campaign on safety; a card and booklet on safety first in use of gas in the home a series of ads on the AGA laboratory seal; radio and

newspaper advertising, and a booklet on gas wastage; home economics broadcast; home economics monthly bulletin; cooking schools; advertising and public talks on the National Housing Act and also home owners loans for remodeling; educational campaign on proper house heating; company meetings on safe automobile driving; series of educational ads on the fundamental principles of gas utility operation; publicity to explain proposed legislation especially in reference to a legislative attempt to make gas pipe lines common carriers and another proposal to divorce production and transmission."

—W. C. Grant, advertising manager,
Lone Star Gas Co.

"There is one problem in public utility advertising that is the bane and nightmare of every advertising man, and doubly important to the utility advertising department. I refer to the tendency to charge to 'advertising' contributions, the tribute paid by utilities to advertising racketeers, good-will contributions, and every fly-by-night proposition that comes along.

"Firmly perched in the seat of honor at the head of every sucker list in this country is some public utility. And without exception they have earned that doubtful distinction by falling for nearly every skin game and bunco proposition, under the name of advertising, that even a halfway good promoter can devise. And there are plenty of these promoters who are really good. Unfortunately, under this heading come a great many projects inaugurated by perfectly sincere, earnest and honest amateurs whose idea of efficiency in raising money consists of sponsoring a calendar, a one-time publication, a program, or anything else in which an advertisement may be placed.

"The net result of any of these advertisements and advertising schemes is that the utility spends the money, the promoter gets it, and the utility has successfully advertised the fact that it is open for more of the same sort of proposition. Not only is that true, but the next promoter or committee who comes along has documentary evidence to prove that the utility man is discriminating against his organization unless he comes through. The fraudulent promoter, of course, trades upon the name of some genuinely worthy organization that the utility executive is afraid he will offend."

—Legare Davis, advertising manager,
Atlanta Gas Light Co.

Gas Bill for Identification

M. A. Staub writes to the *Sun* of his experience in trying to join a public library. For identification he showed a pistol permit issued to him by the Police Dept., and a pass for the N. Y. Stock Exchange, both of which had his photo, age, and other general information. He says: "Was I surprised when the lady said 'I'm sorry, but these are no good. You'll have to bring a gas bill.' I don't think I'll ever be the same."

Have You Heard This One?



Left to right—H. E. Meade, Frank L. Chase and S. L. Drumm in convivial moods

Nation-Wide Refrigerator Sales Contest Gets Under Way

WINNING of a silver "Prosperity Cup" will be the goal of the hundreds of American gas companies participating in this year's nation-wide household refrigerator sales campaign which is sponsored by the American Gas Association Refrigeration Committee. The campaign will last throughout April, May and June.

The 1935 refrigeration-selling campaign will be the largest in the history of the committee's activities. Seven "Prosperity Cups," standing as symbols of success, are offered to winning companies in their respective divisions in addition to more than 500 cash awards which will be distributed to companies and salesmen who come out ahead in the contest.

The awards will be based on installations of Electrolux refrigerators.

Outlining the scope and purpose of the campaign, John J. Quinn, the 1935 chairman of the American Gas Association Refrigeration Committee, states:

"With the Spring and Summer season for the sale of household refrigerators approaching at a time when there are signs that the nation is entering an era of better buying power, the gas industry finds itself in an enviable position to lend its aid toward the speeding of recovery through the sale of a gas appliance for which there is an increasing demand on the part of the buying public.

"In response to the fast-growing public acceptance of a household refrigerator in which refrigeration is caused by heat from a small flame of gas along with the knowledge that 1935 is to be a big year in the household refrigeration field, the gas industry has set out to obtain as large

a share as possible of this year's automatic refrigeration business.

"The gas industry has the advantage of being able to offer a superior type of refrigeration due to the triumph of science in producing a refrigerator that can be run with gas, thus insuring a low cost of operation.



John J. Quinn, chairman of the Refrigeration Committee, holding one of the "Prosperity Cups," symbol of success in the national refrigerator sales contest

"The contest that the Refrigeration Committee has staged for this year is called the 'Second Old-Fashioned Gas Refrigeration Sales Campaign,' succeeding a similar campaign in the Spring and Summer of last year known as the 'Go-Getter Contest' in which 'blue vases' were awarded to gas companies who made the highest number of sales in that campaign. This year's campaign will be conducted on a scale larger than any other campaign in the history of the committee.

"To symbolize the spirit of pros-

perity each of the trophies to be awarded this year has been named a 'Prosperity Cup.' "

The company in each of the seven divisions standing highest at the end of the campaign will receive the "Prosperity Cup" plus \$300; the company standing second will receive \$200; and the company standing third, \$100. The cup will go only to companies who stand first in the campaign.

Additional awards, however, will be granted to the company in each division which makes the greatest number of installations per 10,000 meters, classified as follows: \$200 to the company standing highest and \$100 to the company standing second. (This arrangement makes it possible for a company to win \$500. That is, if a company winning the first prize in the first category mentioned above also wins the additional \$200 just referred to, the total award would be \$500.)

Companies that fall short of winning the silver cup or cash will receive "honorable mention" certificates.

There will be no monthly awards to companies.

The seven groups into which the companies have been divided for the purposes of the contest are:

Division A: All metropolitan companies, namely, Boston Consolidated Gas Company; Consolidated Gas Company of New York; The Brooklyn Union Gas Company; Kings Appliance Corporation; Brooklyn Borough Gas Company; The Philadelphia Gas Works Company; Detroit City Gas Company; Washington Gas Light Company and the Southern California Gas Company of Los Angeles.

Division B: All companies other than the foregoing that have 40,000 meters or over.

Division C: Companies having 20,000 to 40,000 meters.

Division D: Companies having 10,000 to 20,000 meters.

Division E: Companies having 5,000 to 10,000 meters.

Division F: Companies having 1,000 to 5,000 meters.

Division G: Companies having under 1,000 meters.

Cash awards to salesmen will be based on the following conditions:

Twenty salesmen in each division will be eligible for monthly awards of \$10 each for those who stand highest in installations. This means that each month 140 awards of \$10 each will be made. However, no man can win twice—consequently 420 salesmen will win \$10 each during the course of the campaign. Nine grand awards will be given to salesmen in each division who come out ahead for the entire three months, irrespective of whether their companies receive awards or not. These awards will be as follows: first, \$100; second, \$90; third, \$80; fourth, \$70; fifth, \$60; sixth, \$50; seventh, \$40; eighth, \$30, and ninth, \$20.

Winning of the regular monthly award does not disqualify salesmen from competing for these special nine grand awards.

Finally, 1,000 gold medals will be distributed to men whose sales during the campaign are above the average.

A total of 521 cash awards to companies and men will be made.

The campaign will be conducted in collaboration with Servel, Inc., the manufacturers of Electrolux, of Evansville, Indiana. The terms of the campaign were worked out by John J. Quinn, chairman of the American Gas Association Refrigeration Committee, and H. S. Boyle, promotion manager of Electrolux, and other members of the committee, who are: Ronald A. Malony, Bridgeport Gas Light Company; Andrew Bergman, Consolidated Gas Company of New York; Frank H. Trembly, Jr., The Philadelphia Gas Works Company; R. E. Williams, Binghamton Gas Works; F. E. Sellman, Servel, Inc.; W. M. Walsh, Connecticut Power and Light Company, Hartford; H. S. Dutton, Hagerstown

Light and Heat Company, and J. W. West, Jr., secretary, American Gas Association.

Charles E. Eble Advanced

CHARLES E. EBLE, who has been Manager of the Accounting Department of the Consolidated Gas Company of New York, has been appointed Assistant Controller of the Company.

Mr. Eble has been active in the committee work of the American Gas Association for several years. During this period he has served as chairman of the committee on Fixed Capital Records, chairman of the committee on Accounting Machines, and a member of the Managing Committee of the Accounting Section. He is now a member of the Editorial Committee of that Section.

He has also taken an active interest in the affairs of the Society of Gas and Electric Accountants and is at present serving as vice-president of this organization.

Jansen Joins Servel

ADOLPH JANSEN, JR., has joined the sales promotion department of the Electrolux Refrigerator Sales Division of Servel, Inc. He will assist Hank Boyle, sales promotion manager of the company, and will divide his time between the New York office and the factory in Evansville, Indiana, handling special dealer promotion.

Mr. Jansen has been associated with many well known advertising agencies in the past and for several years conducted his own advertising business. Recently he was advertising and sales promotion manager for the General Accessories Co. Inc. of New York City.

Michigan Gas Association

THE Michigan Gas Association will hold its annual meeting in Grand Rapids on June 20, 21, and 22, according to announcement by Secretary A. G. Schroeder.

A Fortright Message With A Punch

Cook with the *BLUE FLAME* OF SPEED AND ECONOMY



NO other fuel known is as satisfactory for cooking as GAS. At the turn of a cock, you have heat—instantly. Fast, economical—flexible. In the oven of a modern gas range you can adjust your heat in a degree, by oven heat control. On top, the new type burners give you a thousand variations of heat from full-on to simmer.

If you'd like to enjoy cooking, get an up-to-date automatic gas range. Its modern improvements will save your time and energy. Oven heat control will watch your oven—its accuracy a big help in making every dish a success! You'll like the smokeless broiler, automatic top

lighters, storage space, warming cabinets and easy-to-clean surfaces, too.

And with all its other conveniences, a modern gas range actually saves money for you. The insulated oven does 15-20% more cooking on the same amount of gas. Improved top burners are 30% more efficient. Food bills have a way of coming down, too, when everything cooks out well.

At your gas company showroom or gas appliance dealer's you'll find just the modern automatic range you need. Our Economy Purchase Plan will make it just as easy to buy as it is to use. Come in, today!

CONSOLIDATED GAS COMPANY OF NEW YORK
and affiliated Gas Companies

Advertising such as this does justice to today's superior gas cooking equipment

Tokens of Friendliness



G. B. Webber

A TOKEN of friendliness is a gentle act or deed on the part of the employee of a gas company which generates in the mind of a customer, a positive feeling of friendliness for the individual em-

ployee, and regard for the company employing him. This is a discussion of customer relations under a slightly different heading.

Whether or not a given customer feels friendly toward us depends upon a series of impressions the nature of which you and I are largely responsible for. If each of our meetings is graceful and sincere and gentle, we need not fear the nature of the impression, because there will be given to the customer the outward signs of friendliness. Not until the desire to be friendly is reflected in action is it of value to you or your company in creating impressions.

Public Opinion Credit Entries

At the risk of becoming personal, but with the hope that by being specific, each of us may get even one idea that may be a little more lasting, we propose to present a paper composed mostly of questions. We ask merely that you answer these questions in your own mind. If you are unable to answer the question tonight, think of it tomorrow just after you have ended an interview with or a call upon one of your customers. If possible, think of the answers as though you were a customer of a large corporation, so that you may have an unprejudiced answer. Each of these questions leads to a thought or act that is an outward signal of friendliness. While singly they may not be of greatest importance when opinions are formed, they all contribute mightily to the reaction which the customer has to you, and your company.

Paper presented at group meetings of the New Jersey Gas Association.

By **GEORGE B. WEBBER**

Public Service Electric & Gas Co., Newark, N. J.

Here are the questions:

1. Do you realize that the customers with whom you deal are helping to pay your salary?

If this thought is continually before you, you will do all you can to please each person with whom you come into gas-business contact. Regardless of color, nationality, or creed, each customer is entitled to every act of courtesy you can give. Your customers have hired you. They are keeping you in your job. They should be given the same consideration that you expect to give your employer.

2. Do you realize that you are the gas company to each of your customers?

Whatever may be your job, fitter, meter reader, or service man, you are representing the gas company. Your pleasantness, your efficiency, your efforts to please customers are tokens of friendliness, and credit entries in the ledger of public opinion.

3. Are you careful about your appearance?

If you are, then even before you speak, the customer's reaction is favorable. A clean shaven face, well kept hair and hands and clean clothes predispose your customer in your favor. Besides the office employee this includes the fitter, the reader, the collector and all other contact employees. Even an outside employee need not carry the misfortunes of one day into the next. A clean, orderly person comes well recommended to the customers with whom he deals.

Symbol of Peace

4. Do you smile?

A smile is a valuable asset in dealing with customers. It is disarming. It is contagious. It opens doors, minds and hearts. It is a symbol of peace. It makes friends and promotes friendliness. It paves the way for difficult interviews. It makes your day's work more pleasant and effective.

It makes you feel better. The results that it brings are real and lasting because it becomes a striking part of the customer's memory of his dealings with you.

5. Do you pay attention to your voice?

A quiet, clear, well-used voice and tone indicate poise, which generates confidence. Confidence is a cornerstone upon which friendliness is built. The voice conveys vigor and sincerity and warmth of feeling, and is associated with breadth of mind. The possessor of a good voice has enviable power. A good speaking voice is within the power of each person to have if he will constantly pay attention to its use.

6. Do you speak the English language correctly?

Our language is the primary basis for understanding one another. If you speak English correctly you command respect even when talking with customers who may be careless in its use. Correct English implies not the use of words of enormous length, but of words that will be most effective in making a given point understood. Good English eliminates many of the causes of misunderstanding. Any man or woman may use English correctly if he will give thought to the manner in which habitually he speaks. It is not the most important item in building friendliness with your customers, but it will affect the quality of that friendliness.

A Mark of Respect

7. Do you rise to greet a customer who approaches your desk?

This is a sign of welcome and a mark of respect, whether it be to a new customer or a complaining customer. Being respectful, it creates respect, and adds tone and vitality to your contacts. It makes it easier to bring the next customer to your desk, and provides a graceful means of concluding an interview.

8. Are you neat and workmanlike, whether it be your kit of tools, or the papers on your desk?

Orderliness eliminates confusion. It

builds confidence in the quality of workmanship that will be used in dealing with customers. Women, generally are more orderly than men, and many of our contacts are with women, whose reaction to a neat appearing desk and office, or to a well kept set of tools or merchandise literature displayed in their homes, is inevitably favorable.

9. Do you always greet your customers pleasantly?

A sincerely spoken "Good morning" or "How do you do," creates in the mind of your customer the thought that here is a person who has not become submerged in routine. This is a fine foundation for a friendly business contact.

10. Do you always try to get the customer's point of view?

Rarely does a customer approach you merely to carry on a conversation. A trip to the gas office to request some form of service or information is an event of some importance to the customer. If you try to see his problem clearly, then you have laid the ground work for real help to the customer. His reactions are particularly vivid at such times, and if you have treated the matter as though it were important, and have given the impression that you understand the problem and are doing all that can be done to solve it, then the customer's reaction will be favorable.

Playing Your Part

11. Do you realize that you are helping to create an impression upon customers whenever you are in their sight?

At times you are one of the principal actors in a play. Other times you are in the background. Even in the background you have an opportunity to contribute unity and consistency to the impression created by the group as a whole. If you conduct yourself, even when not talking directly to a customer, as though you were part of the setting that is helping to form his opinion, then you are contributing to the good reaction which is always associated with an orderly group picture. On the street passing from house to house your manner of carrying yourself and your equipment, your appearance and your attitude toward children and animals are little things

that leave indelible impressions upon people sitting on porches and in living rooms, or passing in and out of the office.

12. Do you use the telephone effectively?

Do you try to make it easy for the customer to transact business over the telephone? Do you speak pleasantly, slowly, and distinctly? Do you try to satisfy the customer yourself rather than transfer him from one to another department? If you do, you remove one of the most common sources of irritation, that of holding a telephone receiver while being transferred from one department to another. A telephone conversation is another opportunity for you to display tokens of friendliness.

Enthusiasm vs. Cold Reason

13. Do you realize the value of the gas service you are helping to sell?

If you take a few minutes every so often to think of gas in terms of the convenience it affords, the labor it saves, the ease with which it can be used, and the many uses to which it can be put in the home, you will become enthusiastic. This enthusiasm will become a part of every contact you have with your customer, and will in turn become part of their reaction to you. Enthusiasm is a more compelling buying force than cold reasoning, and the customer's continued and increased use of gas will depend greatly upon the way you and I can sell enthusiasm for our product. There is no finer form of heat service available than that bought in the form of gas.

14. Do you realize that each of your customers is a center of influence in his neighborhood?

Your customers all have relatives and friends, some more than others. You would be surprised how often the gas company, and even you are discussed within friendly circles. Favorable impressions are strong, and if you have missed not one opportunity to assure friendly contacts with each of your customers you can predict just what opinion will be created by the mention of your name.

Many more questions might be asked directly applying to the work of the meter reader, the collector, the fitter, the inspector, the credit manager, the

salesman, the service or applications clerk, the stenographer. A sufficient number of items has been suggested to demonstrate that the customers' opinions are formed usually not on one big event, but on a series of little events and impressions. Taken singly they may seem too insignificant to mention, yet added together they are our customer relations problem. There is no magic word that can be used to build good relations.

Effectiveness of Habits

Those of us whose work is pretty much the same from day to day tend to drop into habitual ways of doing things. That is natural. Even you whose work brings you into daily contact with customers develop habitual ways of handling them. Periodically, however, each of us whose work is largely with customers, and that means most of us in the gas business, should examine without prejudice the effectiveness of his habits, in terms of the individual opportunities each contact affords for building friendliness. Each day then will show you places in your work with customers where opportunities exist for using tokens of friendliness. Habits are all right if they are good habits, and good habits can be acquired as easily as mediocre ones.

It is true that industry in general, including the gas company, is so organized that the individual employee in a routine job can be readily replaced. Within a short time, the new person can discharge the routine requirements satisfactorily. But each job, no matter how routine it may be, provides an opportunity for the use of certain qualities that can never be fully defined, nor replaced. Men and women who can add this quality to their work, day in and year out, are priceless assets to a business such as ours where friendliness and warmth of feeling in relations with customers are so essential. Whatever your job may be, you have it definitely within your power to add the quality of friendliness to the work you do, and thus increase your stature in the eyes of the customers whom you serve, and the men with and for whom you work.

The gas business must have friendliness during these trying periods, because friendliness brings with it a willingness to understand the difficult

problems that are being met courageously, and honestly by the leaders of the individual companies. The effect of friendliness within the group of customers that you have contact with is great. It can give the lie to vicious propaganda. It can build sales of ranges, water heaters, building heating units and refrigerators with all of the convenience and modernness that these unequalled appliances bring. It can give vitality and health to the gas business. Every action that benefits the gas company will benefit you as an employee. You stand to gain, and you can't lose, by putting into practice the answers to these questions which you know to be right, and by adding to your contacts, as the opportunity presents, other tokens of friendliness.

Obermeyer Heads Commercial Council

THE Commercial Council of the Consolidated Gas Company of New York and affiliated gas companies elected the following officers at its annual meeting.

Chairman—Henry Obermeyer, assistant to vice-president, commercial relations; vice-chairman—George Ostlund, general sales manager; recorder—Howard F. Weeks, assistant director, Editorial Bureau.

Members of Executive Committee (two year terms)—G. A. Burrows, manager, Commercial Department; J. Loebenstein, manager, Domestic Division; W. E. Shepard, assistant treasurer and manager, Commercial Department, Central Union Gas Company; D. W. Napier, superintendent, Customers Service Department, Northern Union Gas Company.

W. M. Gaylord Promoted

W M. GAYLORD recently was named superintendent of the gas department of the Springfield Gas and Electric Company to succeed E. F. Hannah who was recently killed in an automobile accident near Lees Summit, Mo. The announcement of Mr. Gaylord's appointment was made by William H. Swift, Jr., vice-president and general manager of the company.

Mr. Gaylord, formerly a member of the Cities Service Company at Denver, Colo., went to Springfield in March, 1931, to take the position of industrial gas engineer.

Porter W. Martin, assistant superintendent of the gas department at Springfield, has been promoted to take Mr. Gaylord's position as industrial gas engineer. Mr. Martin was transferred to the Springfield Gas and Electric Company last year from the Consumers Gas Company at Hot Springs, Ark.

Association Announces State Liaison Officers for FHA

PURSUANT to the resolution adopted at the last annual Convention, the Association has recently completed the appointment of State Liaison Officers in the majority of states in the Union to aid member gas companies in supporting and capitalizing upon the Better Housing Program of the Federal Housing Administration.

In most cases these Liaison Officers are located in the same city with the Federal Housing Director for the state and are thus in a position to keep in touch with Housing developments and aid member companies in promoting this program.

Appointments have been completed for the following states:

ALABAMA. C. B. Gamble, Birmingham Gas Co., Birmingham, Ala.
ARIZONA. A. F. Morairty, Central Arizona Light & Power Co., Phoenix, Ariz.
ARKANSAS. R. W. Curran, Little Rock Gas & Fuel Co., Little Rock, Ark.
CALIFORNIA. C. H. Potter, Southern Counties Gas Co., Los Angeles, Calif.
COLORADO. G. B. Buck, Public Service Co. of Colorado, Denver, Colo.
CONNECTICUT. E. E. Eysenbach, Hartford Gas Co., Hartford, Conn.
DELAWARE. T. W. Wilson, Delaware Power & Light Co., Wilmington, Del.
FLORIDA. D. H. Levan, Jacksonville Gas Co., Jacksonville, Fla.
GEORGIA. W. W. Winter, Atlanta Gas Light Co., Atlanta, Ga.
IDAHO. R. C. Young, Boise Gas Light & Coke Co., Boise, Idaho
ILLINOIS. T. V. Purcell, The Peoples Gas Light & Coke Co., Chicago, Ill.
INDIANA. F. X. Mettenet Public Service Co. of Ind., Indianapolis, Ind.
IOWA. C. A. Nash, United Light & Power Engr. & Constr. Co., Davenport, Ia.
KANSAS. L. L. Roesle, Capital Gas & Electric Co., Topeka, Kan.
KENTUCKY. Robert Montgomery, Louisville Gas & Electric Co., Louisville, Ky.
LOUISIANA. W. E. Clement, New Orleans Public Service Inc., New Orleans, La.
MAINE. G. W. Stiles, Portland Gas Light Co., Portland, Me.
MARYLAND. Wm. A. Tobias, Hagerstown Light & Heat Co., Hagerstown, Md.
MASSACHUSETTS. F. D. Cadwallader, Boston Consolidated Gas Co., Boston, Mass.
MICHIGAN. C. W. Bennett, Detroit City Gas Co., Detroit, Mich.
MINNESOTA. J. K. Swanson, Minneapolis Gas Light Co., Minneapolis, Minn.
MISSISSIPPI. Rex I. Brown, Mississippi Power & Light Co., Jackson, Miss.
MISSOURI. Ray C. Ratcliffe, Kansas City Gas Co., Kansas City, Mo.
NEBRASKA. F. H. Brooks, Gen. Mgr. Peoples Natural Gas Co., Omaha, Neb.

NEVADA. Geo. A. Campbell, Sierra Pacific Power Co., Reno, Nev.
NEW HAMPSHIRE. A. J. Smith, Concord Gas Co., Concord, N. H.
NEW JERSEY. H. P. J. Steinmetz, Public Service Electric & Gas Co., Newark, N. J.
NEW YORK. A. Dean Dudley, Syracuse Lighting Co., Inc., Syracuse, N. Y.
NORTH CAROLINA. H. W. Gee, Raleigh Gas Co., Raleigh, N. C.
OHIO. C. I. Weaver, Ohio Fuel Gas Co., Columbus, Ohio
OKLAHOMA. W. J. Young, Oklahoma Natural Gas Co., Tulsa, Okla.
OREGON. B. H. Parkinson, Portland Gas & Coke Co., Portland, Ore.
PENNSYLVANIA. Conrad N. Lauer, The Philadelphia Gas Works Co., Philadelphia, Pa.
RHODE ISLAND. F. C. Freeman, Providence Gas Co., Providence, R. I.
SOUTH CAROLINA. P. Connelly, South Carolina Public Service Co., Charleston, S. C.
SOUTH DAKOTA. S. D. Whiteman, Sioux Falls Gas Co., Sioux Falls, S. D.
TENNESSEE. Louis C. Hungate, Jr., Memphis Power & Light Co., Memphis, Tenn.
TEXAS. Wesley Wright, The Dallas Gas Co., Dallas, Texas
UTAH. J. D. Roberts, Utah Gas & Coke Co., Salt Lake City, Utah
VERMONT. W. H. Lawson, Central Vermont Public Service Co., Rutland, Vt.
VIRGINIA. B. B. Ferguson, Portsmouth Gas Co., Portsmouth, Va.
WASHINGTON. James F. Pollard, Seattle Gas Co., Seattle, Wash.
WEST VIRGINIA. H. A. Wallace, United Fuel Gas Co., Charlestown, W. Va.
WISCONSIN. Bruno Rahn, West Allis Gas Co., Milwaukee, Wis.
WYOMING. J. G. Keegan, Cheyenne Light Fuel & Power Co., Cheyenne, Wyo.

Women in Business

Mrs. Franklin D. Roosevelt, in a radio talk March 8, made public her own list of eleven women of achievement whose careers, she said, "show the world is progressing." Along with Francis Perkins, secretary of labor, Jane Addams, Amelia Earhart, and others, Mrs. Roosevelt named Mary Elizabeth Dillon, president and general manager of the Brooklyn Borough Gas Company, Coney Island, New York, as a good example of what women can do in the field of business. Miss Dillon, who is a member of the American Gas Association, became general manager of the Brooklyn company in 1916 and was made president in 1925. She has an enviable record as a utility company executive.



A group of students in the Norwood High School Foods Laboratory with their instructor. The unit kitchen idea is illustrated by this photograph. One of the gas meters by which fuel cost studies will be made can be seen directly to the left of the range

The Latest Development in Food Preparation Instruction



Mary Belle Burnett, a member of the home service division of The Union Gas and Electric Company, Cincinnati, pointing to one of the gas meters in the laboratory

General view of the Norwood High School Foods Laboratory looking toward the instructor's desk



Modern Food Laboratory Installed in Ohio School

WHAT is regarded as one of the finest food laboratories in school use has recently been completed at the Norwood (O.) High School. The project was planned and developed by H. J. Shirley, superintendent of buildings for the Norwood Board of Education, with the cooperation of specialists in home service, lighting, and ventilating of The Union Gas and Electric Company. Working with Mr. Shirley on this project were Laura Judd Bryant, director of the Home Service Division, E. H. Johnson, gas engineer for the Gas Commercial Department, and R. J. Crump of the Lighting Bureau.

Eight ranges are installed in the laboratory. Four of them are gas ranges of the size and style ordinarily used for school purposes. Two of them are large gas ranges, and the remaining pair are electric. Each range has its own individual meter.

The gas meters used are American Meter Company's A.S.9—5 B, Demonstration Dry Gas meters, fitted with a 6-inch enameled dial. The dial face used gives not only the hourly rate of consumption of gas, but also registers on one large and four small inner circles the total amount of gas used during a long series of tests. On these meters, the registration of the total amount of gas consumed is in .01 of a cubic foot, and the minute observation circle reads to 60 cubic feet an hour. The hands on the dials are movable, and can be set back to zero at the end of any test, or whenever desired.

Four of the six gas meters are unique in that the front wall is of glass, exposing the bellows. This, it is believed, will provide a means of showing the students how a gas meter operates.

The Home Service Division has been requested to send one of its members to the foods laboratory at the beginning of each semester to explain to classes the operation and care of the

By H. J. SHIRLEY

ranges and to show the students how to read the meters.

The two electric meters also are calibrated in fractions, and as small a quantity as .01 kilowatt-hour can be measured. Thus, it will be possible to make accurate comparisons of fuel costs.

The layout of the room, in general, consists of eight unit kitchens, each fully equipped with a sink with double drain boards, mounted on a storage cabinet with drawer and shelf space, a serving table with five chairs, ample cupboard space, and a range. The four center units are so arranged that the furniture may be easily slid into positions, so that a large seating arrangement is provided for lecture purposes. When so arranged, all pupils face the instructor's desk and blackboard at the end of the room.

A black and white color scheme has been followed throughout, and the room presents a very attractive appearance. The table tops are black linotile to prevent any reflected glare.

Another feature of the installation is the entire elimination of flue pipes. This was done so that every pupil would have an unobstructed view of the blackboard at all times, and the teacher would be able to see every student.

To accomplish this, the ranges were vented into a duct system installed beneath the floor. The main section of the duct is 6-inch vitrified pipe, with an 8-inch Y extending off to reach another group of four ranges. Complete exhaustion of all products of combustion is insured by means of an exhaust fan located in an adjoining room. The fan is operated on a 220-Volt, 3-phase alternating current circuit, and has a capacity of some 300 cubic feet of air per minute. The capacity of the fan is larger than is actually necessary for proper venting of the ranges, but the over-size unit

was chosen with the thought that it would also aid in ventilating the room. Only about 2,400 cubic feet of spent flue gases per hour are discharged.

As a safety feature, the switch which controls the exhaust fan also operates a valve in the main line, and if the gas is to be turned on, the fan must operate. In this way, there is no likelihood that a range will be used unless provision is made for the exhaustion of flue gases. The switch is located near the teacher's desk, away from the ranges, and is equipped with an indicator light, providing additional safeguard.

One difficulty which arose was the adjustment of the flue in each range so that an even draft would be secured. To make these adjustments members of the Home Service Division baked biscuits while a gas engineer located the best position for the damper in each range. This adjustment, of course, is permanent, and all ranges now function under the same conditions.

At the present time, 166 students are using the laboratory—from the 8th, 9th, and 10th grades, and an evening class of adults. During the coming semester, an advanced course will be given for girls of the higher grades, and according to the schedule for the next school year beginning in September, the laboratory will be in use almost every period of every day.

Speaks on Air Conditioning

AT the March meeting of the Ontario Chapter of the American Society of Heating & Ventilating Engineers, which was held in Toronto, Eugene D. Milener of the American Gas Association Headquarters staff delivered an address on automatic house heating and air conditioning.

Emphasis was placed on the fact that a complete heating and air conditioning service is now available for all types of buildings using one source of energy throughout the year.

ECONOMICS OF GAS FUEL

(Continued from page 134)

The following table compares the net cost of energy supplied under these two rates:

<i>Energy Used Per Month— B.t.u.'s</i>	<i>Cost of Electricity</i>	<i>Cost of Gas</i>
500,000	\$ 4.40	\$.92
1,000,000	7.19	1.65
1,500,000	9.95	2.37
2,000,000	12.75	3.09
3,000,000	18.31	4.54
4,000,000	23.88	5.94
5,000,000	29.45	7.29
10,000,000	57.28	14.04
20,000,000	112.96	26.55
50,000,000	279.97	64.05

Thus while we do not find the wide range in cost between energy in the form of electricity and in the form of gas in Milwaukee that we found in the other comparison, we still find that electricity costs from four to five times as much as gas.

These figures should prove conclusively to even the most partisan observer that energy can be and actually is delivered to the customer's premises in the form of gas at one-quarter to one-eighteenth of the cost of the same energy in the form of electricity.

Thus, from the standpoint of production, transmission, and distribution expense, gas is by far more economical than electricity.

It remains only to discuss the utilization of these two fuels.

The cooking load is the backbone of the gas industry. Without it the industry could scarcely survive.

Yet, this is no reason for its existence. The gas industry is entitled to the cooking load only if it can do the job as well as some other fuel at no increase in cost.

Because electricity is the only competitor which gas has for this load in the modern home, all discussions must relate to it.

Is there anything that electricity can do in cooking which gas cannot do equally well?

The answer is positively and definitely, "No!"

There is no cooking process which cannot be done just as well with gas as with electricity, and there are cer-

tain processes which can be done much better with gas than with electricity.

No housewife has ever been able to boil water, coffee, or milk as rapidly on an electric range as on a gas range. No housewife has had the success in broiling a steak or chop by electricity that she has had when using gas.

More substantial evidence is available in the fact that chefs in both large and small restaurants and hotels choose gas in preference to electricity for their cooking fuel.

More Value with Gas

The superiority of gas for cooking becomes more pronounced when appliances are considered. The modern gas range has oven temperature controls and time clock controls exactly similar to those used on electric ranges. The modern gas range is made in a variety of styles and models to meet every demand. There is no maintenance expense whatsoever on a gas range, while electric ranges must have their heating elements replaced periodically. Gas ranges have been available at prices from \$25 up for years, while an electric range which could be sold for \$77 was only recently heralded as a great achievement.

It is thus evident that gas is superior to electricity for cooking because of the following facts:

1. It does a better job of cooking;
2. It costs less;
3. The gas range requires a smaller initial investment;
4. There is no maintenance on a gas range;
5. The housewife has a greater variety of styles, models and controls to choose from.

As these facts prove that gas is giving the public more value with better service than electricity, the gas industry should be given public endorsement of its efforts to build the gas cooking load.

Exactly the same situation exists in the field of water heating. Electrical water heaters are frequently off-peak heaters. That is, they heat the water during the night when the electricity is not used for other purposes.

But how often is there any demand for hot water during the night? The public wants hot water when it needs it during the day. Gas is the only fuel equipped to give this service instantly as needed, because gas alone can supply energy at a rate rapid enough to heat a tank of water quickly.

Even when electricity is available for day-time water heating, it takes many hours to heat a full tank of water.

With gas the public can have hot water in adequate quantities within a few minutes after lighting the tank heater, and if an automatic water heater is in the home hot water is on tap at all times.

Thus, from the standpoint of public convenience and comfort, gas is superior to electricity for water-heating purposes.

From the standpoint of appliance cost, again gas leads. A tank heater can be purchased for as little as \$7, while the cheapest electrical water heater costs about \$50.

There is, of course, no maintenance required on a gas water heater, while the elements on an electrical heater must be replaced from time to time.

Thus, gas leads electricity for water-heating purposes by lower operating cost, superior service, lower appliance investment and lower charges for appliance maintenance.

Because of these advantages to the public, gas is entitled to and should retain the water-heating load.

Within the past three years the gas industry has made rapid strides forward in the field of automatic refrigeration.

The modern air-cooled gas refrigerator is unquestionably the most efficient machine available to the American public today. This refrigerator has no moving parts of any description and there is nothing whatsoever to wear out or cause mechanical difficulty.

Its operating expense is amazingly low. This appliance operates at one-half to one-fourth of the cost of a similar size electric machine.

The original cost of this box is about the same as the best grade of electric box of the same size. There is not yet a gas box available which competes with the cheapest grade electric boxes.

These facts conclusively prove that

consumers are better off from the standpoints of operating cost and upkeep when using gas for refrigeration and are at least equally as well off from the standpoint of initial investment if a first-grade product is being selected.

Gas Heat Superior

In the field of automatic house heating, gas stands alone. The progress being made by the expansion of natural gas pipe lines virtually assures the public in the larger centers of population of gas for house-heating purposes. At the present time in most manufactured gas situations gas is available at a price competitive with fuel oil. The investment involved is at least as low as for oil while the life of the equipment is much longer and the expense of its upkeep negligible.

The advantage of gas, including cleanliness, convenience, uninterrupted service, comfort, and low cost, bring to the home the greatest labor-saving aid which this generation has seen.

In this field gas is supreme. Electricity cannot possibly hope to compete because the generating capacity necessary to meet peak house-heating loads eliminates any possibility of economic rates.

For identically the same reasons, air conditioning in winter and summer can best be accomplished by gas. In the final analysis, air conditioning and cooling is the reverse of house heating. Because this is true, all of the fundamental principles applicable to heating are likewise applicable to air conditioning. The chief aid to summer comfort is removal of humidity, and efficient gas-burning apparatus is already on the market for this purpose.

Thus, electricity is barred from this field on a large scale because the tremendous investment required to meet peak loads precludes economic retail rates.

It may appear ludicrous to claim any advantage for gas in the field of lighting. Nevertheless, during the summer of 1934 there appeared a new flood light for exterior use which is operated by gas.

As this light can be operated for one-third to one-half of the cost of a similar size of electric light, there may

be an unexpected expansion in this field.

Already this light has been installed in numerous filling stations, stores, and similar establishments desiring flood light. Its success has been so pronounced and its economy so great that it is safe to predict a steady replacement of electric flood lights with this new gas equipment.

In the foregoing discussion of gas and electrical applications, the blunt statement has been made that gas is more economical than electricity.

This statement has been made without mentioning the factor of utilization efficiency, which necessarily is an important element.

In the field of cooking, electricity enjoys an advantage over gas insofar as utilization efficiency is concerned. It requires approximately 6,300 B.t.u.'s in the form of gas to do the work of

3,412 B.t.u.'s in the form of electricity. Thus, the ratio of utilization efficiency is 1.85 to 1, with the advantage in favor of electricity.

It has already been demonstrated, however, that energy delivered to the customer's home in the form of gas costs from one-fourth to one-eighth of the cost of the same energy in the form of electricity.

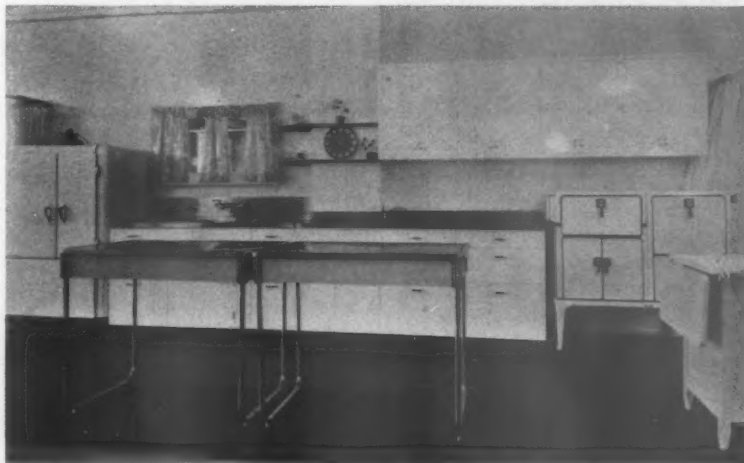
Thus, even when electricity is given the advantage of utilization efficiency in cooking, gas will still cost from one-half to one-ninth of the cost of electricity for an identical application requiring the same quantity of heat.

The Cost Factor

In none of the other fields discussed does electricity enjoy the same proportionate advantage of utilization efficiency.

In water heating, refrigeration, air

Newspaper Home Economics Kitchen



IN this newspaper laboratory kitchen, lecture demonstrations on cooking in courses of twelve lessons each, under the direction of Mrs. Mary Martensen, home economics director of the Chicago Evening American, are given to several hundred women each week. The testing of recipes for publication in newspaper columns is another use made of the modern equipment shown.

The dull luster of metal complements snowy white walls and cabinets, the only color notes being the salmon pink of the cellophane cloth curtains and the "What Not" shelves which are jade,

beneath. Gayly colored dishes and trinkets give a bit of frivolity to the atmosphere of efficiency.

Mrs. Martensen gained the inspiration for this new kitchen from her visit to the gas industry booth at the American Home Economics Association Convention exhibit held in New York City last June. At that time the newspaper photographed her in the gas kitchen on display, which was sponsored jointly by the American Gas Association, the gas companies of Metropolitan New York and the International Nickel Company.

conditioning, and house heating, utilization efficiencies with gas range from 75 to 85 per cent, whereas utilization efficiencies with electricity may vary from 80 to 95 per cent.

Thus electricity enjoys a maximum advantage of not more than 1.3 to 1 in any of these processes.

As has been demonstrated, this advantage of electricity is by no means sufficient to offset the basic advantage which gas enjoys because of its delivery to the customer's appliances at one-fourth to one-eighteenth of the cost of electricity.

Thus, it is shown that gas is more economical for the applications discussed herein, even when the influence of utilization efficiency is considered.

The foregoing statements show conclusively that the gas industry is making a genuine contribution to American life.

Gas, either natural or manufactured, is produced, transported and distributed to the customer's home at a cost which ranges from one-fourth to one-eighteenth of the cost of electricity.

In the fields of cooking, water heating, refrigeration, house heating, air conditioning, and flood lighting, gas appliances can be purchased at a much cheaper cost than electric appliances of equal quality.

Likewise, gas appliances can be operated and maintained with materially less annual expenditure than is possible with similar electric devices.

Furthermore, in these particular fields, gas possesses advantages of utilization which cannot be approached by any other source of energy.

Conclusions

In conclusion, it must be remembered that gas and electric service is rendered for the benefit it gives to the public.

There are certain fields where gas is superior to electricity and there are certain fields in which electricity is superior to gas.

It would be utterly ridiculous for the gas industry to claim superiority for use in home lighting, vacuum cleaners, waffle irons, and the thousand and one other electric appliances used in the modern home.

It is just as ridiculous for the electric industry to claim advantages in

the fields of cooking, water heating, refrigeration, house heating, air conditioning, and flood lighting.

Each service has its own use and in those fields it should be free to expand and improve its contribution to human welfare.

So long as the people of the United States must practice economy in the purchase of utility service, the gas industry should receive public support and indorsement. The facts prove conclusively that gas is just as desirable and much more economical in these certain applications than any other source of energy known today. These advantages of gas come not from reasoning or deduction, but from inherent physical and mechanical characteristics which cannot be duplicated.

Because of these facts which enable gas to render superior service at minimum cost, the gas industry must be recognized as a major contributor to public welfare, comfort, and convenience.

Himsworth Heads Employee Group

H. H. HIMSWORTH, general superintendent of the Hunts Point Plant of the Consolidated Gas Company of New York, was recently elected president of the Gas Companies Mutual Aid Society, employee welfare organization.

J. R. Cox, general superintendent, transportation department, was elected first vice-president, and W. L. MacIntosh, assistant engineer of Construction, was chosen 2nd vice-president.

H. L. Peden, retiring president, reported that virtually 100 per cent of the employees of the Consolidated and its affiliated gas companies are members of the Society. A total of \$21,398,500 in life insurance is carried by the Society for employees.

German Association Head Retires

DR.-ING. KARL LEMPELIUS, manager of the German Gas and Water Association, Berlin, is retiring from active work as head of the Association on March 31. Dr. Lempelius has rendered long and distinguished service to the gas industry of the German Reich for many years and is well known throughout the world. He will be succeeded by Herr Dipl.-Ing. Franz zur Nedden.

J. F. Donovan Enters Advertising

J. F. DONOVAN, of New York, has resigned as general sales manager of the Standard Gas Equipment Corporation and has become associated with the advertising firm of Williams & Saylor, New York. Mr. Donovan with A. W. Humm will direct the activities of the gas merchandising division of the above agency.

W. H. Hodge Honored

W. H. HODGE, vice-president and manager, sales and advertising department, Byllesby Engineering and Management Corporation, was the guest of honor at a banquet given February 28 at the Electric Club, Chicago, the occasion being in celebration of Mr. Hodge's twenty-fifth anniversary with the Byllesby organization. The dinner was attended by business associates and intimate friends.

Water Works Convention

P.ARTICIPANTS in the American Water Works Association Convention, to be held in Cincinnati, May 6-10, will have an opportunity to both work and play according to arrangements being completed by E. A. Munyan, gas department manager of the Union Gas and Electric Company, Cincinnati, and home-city member of the convention management committee.

Business sessions have been arranged for the new Netherland Plaza Hotel in the heart of downtown Cincinnati. Mayors and city managers are taking an active interest in the convention, according to Charles H. Eastwood, chairman of the attendance, membership and publicity committee.

William J. Orchard, chairman of the entertainment committee, has arranged for a comprehensive program of fun and amusement for every minute during the convention not taken up by business sessions.

Omission of January Statistics

W.E regret the omission of the monthly summary of gas company statistics, for January, 1935. The demands from the various governmental agencies, including local, federal and state taxing bodies, and the large amount of work in connection with holding company legislation, have made it impossible for our cooperating companies to forward their reports as promptly as heretofore. The January figures will be available in printed form very shortly and copies may be had upon application to Headquarters.

Affiliated Association Activities

Oklahoma Utilities Association



W. B. Head, Jr.

WITH more than 500 representatives of Oklahoma and Texas utility companies in attendance, the two-day convention of the Oklahoma Utilities Association held at Oklahoma City, March 12 and 13, was one of the peppiest meetings ever sponsored by that Association. The keynote of the convention was an attack on impending Federal and other legislation seeking to embarrass the utility business.

Several speakers touched on the holding company bill and resolutions were passed at the final session of the convention condemning this bill and calling upon all members of the association to inform the public of the purposes of the bill and its damaging consequences if passed in its original form. P. C. Simons, an attorney of Enid, summed up the prevailing opinion of the delegates when he said that the time had come when the American people must decide whether "they want to give up their traditions, surrender their constitutional form of government under which they have enjoyed the greatest measure of liberty ever known, and have a dictatorial form of government under which the individual is just a pawn of those in power."

L. B. Denning, vice-president of the American Gas Association, speaking without the aid of notes, reviewed his career of thirty-three years in the natural gas business. Mr. Denning declared that much of the New Deal philosophy is simply a revival of old conditions in new words, and stated that the phraseology employed in the holding company bill is the same as was heard in 1911 and again in 1915. Reforms are coming, he said, and the public utility industry must accept them. Mr. Denning brought his remarks to a close by pleading for a more extensive use of newspaper advertising devoted to a better understanding of the problems of the utility industry.

R. D. Cockrell, who was employed by the association to make a study of operations in the TVA belt, gave a detailed analysis of conditions there affecting the utility companies. George A. Davis, vice-president of the Oklahoma Gas & Electric Company, commented on public relations work, and recommended that the utility companies tell their story or suffer the consequences. E. F. McKay,

manager of the association said in his annual report that for the last three years Oklahoma has been out of the picture as a demonstration of successful municipal ownership as painted by organized public ownership advocates nationally.

"Formerly pointed to as the country's best demonstration of the tax-free town idea," Mr. McKay declared, "mention of our state in this connection no longer is frequent. We believe this to be due to the assembling and wide dissemination of the facts, which has been the major activity of our association during this time. Our exhibits, challenging and disproving claims with reference to specific cities and towns of this state as demonstrating successful municipal operation, our annual comparisons of bills for electric and gas service in municipal utility towns compared with company-served towns of nearest population, our annual exhibit showing municipal tax levies for all towns and the relation of municipal utilities thereto, and the studies by Mr. Cockrell showing the real results of municipal utility operation in most of the important towns in Oklahoma having municipal utilities, have gone into most of the states of the union and, we feel confident, have been effective in silencing those who formerly were loudest in

pointing to Oklahoma as the nation's laboratory for public ownership."

Other speakers included W. C. Grant, Dallas, Texas; H. B. Cobban, Miami, Okla.; W. R. Emerson, Oklahoma City; C. N. Robinson, Tulsa; G. M. Kloidy, Lincoln, Nebr.; William A. Irwin, Topeka, Kans.; and Charles W. Person, American Gas Association, New York.

New officers elected were: President, W. B. Head, Jr., Oklahoma Power & Water Company, Sand Springs, Okla.; Vice-President, C. A. Breitung, Southwest Gas Utilities Corporation, Ada, Okla.; Treasurer, W. R. Emerson, Oklahoma Gas & Electric Company, Oklahoma City.

Missouri Association of Public Utilities

THE twenty-ninth annual convention of the Missouri Association of Public Utilities will be held April 24-26 at Kansas City, Mo., at the President Hotel. President Fred Karr, of St. Joseph, Mo., will preside at the business sessions.

Among the speakers this year will be: Congressman Joseph B. Shannon, Washington, D. C.; Maj. Alexander Forward, New York City, managing director, American Gas Association; Dr. E. T. McGaugh,

Convention Calendar

APRIL

- 15-17 Mid-West Gas Association
Hotel Fontenelle, Omaha, Nebr.
- 22-26 American Chemical Society
Hotel Pennsylvania, New York, N. Y.
- 25-26 Missouri Association of Public Utilities
President Hotel, Kansas City, Mo.
- 29-30 American Trade Association Executives
Washington, D. C.
- Apr. 29-May 2 U. S. Chamber of Commerce
Washington, D. C.

MAY

- 1-3 Natural Gasoline Association
Hotel Tulsa, Tulsa, Okla.
- 2-4 A. G. A. Distribution Conference
Cleveland Hotel, Cleveland, Ohio
- 6-9 Natural Gas Department, American Gas Association
Hotel Peabody, Memphis, Tenn.
- 6-10 American Water Works Association
Netherland Plaza Hotel, Cincinnati, Ohio
- 7-9 Pennsylvania Gas Association
Lodge at Skytop Club, Skytop, Pa.
- 13-14 National Fire Protection Association
Biltmore Hotel, Atlanta, Ga.

- 13-14 A. G. A. Joint Committee Conference of the Production and Chemical Committee
Hotel New Yorker, New York, N. Y.
- 31 A. G. A. Executive Conference
Atlantic City, N. J.

JUNE

- 3-6 Edison Electric Institute
Mayflower Hotel, Washington, D. C.
- 10-11 Canadian Gas Association
Quebec, Canada
- 20-22 Michigan Gas Association
Grand Rapids, Mich.
- 24-28 American Home Economics Association
Chicago, Ill.
- 24-29 American Society for Testing Materials
Book-Cadillac Hotel, Detroit, Mich.

OCTOBER

- 14-18 American Gas Association
Atlantic City, N. J.
- 14-18 National Association of Railroad and Utilities Commissioners
Nashville, Tenn.
- 14-18 Twenty-Fourth Annual Safety Congress
Louisville, Ky.

NOVEMBER

- 11-14 American Petroleum Institute
Biltmore Hotel, Los Angeles, Calif.

Jefferson City, Mo., Missouri State health commissioner; Prof. George W. Stephens, St. Louis, Mo., Dean of Economics, Washington University; Frank C. Lynch, managing director of the Kansas City Safety Council; E. L. Hough, St. Louis, Mo., Union Electric Light & Power Company.

The program is being completed by the Program Committee, consisting of C. A. Semrad, chairman, St. Joseph Railway, Light, Heat & Power Company; H. E. Scheark, Kansas City Power & Light Company; Dudley Sanford, St. Louis County Gas Company; C. J. Prashaw, Missouri Power & Light Company; and R. L. Shuck, Springfield Gas & Electric Company.

The Association is composed of virtually every privately owned electric, gas, water, and street railway company in Missouri.

A Safety Meeting and round-table discussion of accident prevention on the afternoon of April 24 will be a new convention feature this year. E. S. Willevier, Springfield Gas & Electric Company, is chairman of the committee in charge of the meeting.

The annual State Speaking Contest sponsored by the Association will be held on the evening of April 25. Separate contests will be held for men and women. Employees of electric companies throughout the state are eligible. The contestants will be chosen by company eliminations, the winners competing in the State contest. The subject for women contestants will be: "Looking Forward in the Utility Industry." For men: "Equalizing the Tax Burden." Prizes will be awarded to the first and second winners in each class.

The annual dinner and dance will take place on the evening of April 26. Men's and women's golf contests will be held on the afternoon of April 26. A special entertainment program is being arranged for the ladies attending the convention. The various entertainment activities are being prepared by the Entertainment Committee, of which Paul C. Ford, Kansas City Gas Company, is chairman.

Southern Gas Association

SOME 300 delegates attended the recent meeting in Dallas, Texas, of the Southern Gas Association, and the Southwestern Sales Conference. In the absence of President W. W. Winter, H. E. Meade, of New Orleans, presided at the general sessions. Mr. Winter had prepared a paper on "TVA Policies as They Affect the Gas Industry," and this drew one of the most interesting audiences at the convention.

L. B. Denning, vice-president of the American Gas Association, also prepared a paper for the meeting. Excerpts from these two papers and others by W. C. Grant and Legare Davis appear elsewhere in this issue. W. E. Leverette, Commercial Manager of the Nashville Gas and Heating Company, described merchant-

dising operations in the TVA area and declared that the Government is going to great effort to give the people cheap electric cooking when there already exists a much cheaper and better fuel service in gas.

Lyle C. Harvey, vice-president of The Bryant Heater Company described his company's new air conditioning unit and L. F. Ryall of the General Gas Light Company delivered a paper on "Selling Gas Floodlighting."

Other speakers were George Kollock, Atlanta Gas Light Company; R. L. Cox, Detroit-Michigan Stove Company; C. H. French, Standard Gas Equipment Corporation; George Godwin, Mississippi Power & Light Co., and a number of home service directors of Southern gas companies.

C. B. Gamble of Birmingham was elected president of the Association for the coming year and New Orleans was selected as the convention city.

Other officers elected were: First vice-president, H. E. Meade, New Orleans; second vice-president, Chester L. May, Dallas; secretary-treasurer, S. L. Drumm, New Orleans.

Directors named were: E. S. Dickey, Baltimore; R. F. Fledderman, Hamilton, Ohio; D. H. Levan, Jacksonville; J. V. Strange, Houston; E. B. Ballinger, Kansas City; C. K. Patton, Dallas; H. G. Bonner, Knoxville, and C. F. Carter, Nashville.

L. K. Langdon Dies



L. K. Langdon

LAWRENCE K. LANGDON, president of the Ohio Gas and Oil Men's Association and one of the country's outstanding authorities on legal matters pertaining to public utilities, died at his home in Cincinnati, Ohio, February 27. He was fifty-nine years old.

Prior to his retirement in 1933, Mr. Langdon was general counsel for the Union Gas and Electric Company. He was affiliated with that company for 15 years.

A staunch Republican, Mr. Langdon was elected a Representative from Warren County, Ohio, in 1907 and again in 1909. While at Columbus, he was one of the leaders in drafting laws creating and governing the Public Utilities Commission. Later he became a member and attorney for the commission.

Mr. Langdon was a member of the American Gas Association, having been particularly active in the Natural Gas Department. He formerly served as a vice-chairman of the department and several

years ago was a member of the Executive and Managing Committees.

In addition to his widow, Mrs. Willa Langdon, he is survived by Lowell Langdon, a son by a former marriage.

Capt. MacKay Dies in Boston



Capt. MacKay

CAPTAIN WILLIAM E. MACKAY, 70, president of the New England Coke Company and one of the most prominent industrialists in the East, died March 2 in Boston, Mass.

A native of Philadelphia and a graduate of the United States Naval

Academy, Capt. MacKay became associated with public utilities in Boston in 1887. At the time of his death he was president and director of the New England Coke Company, trustee of the Eastern Gas and Fuel Associates, director of the Federal Coal and Coke Company, director of Koppers Coal and Transportation Company, chairman of the commissioners of the Massachusetts Nautical school, vice-president and trustee of the Massachusetts Gas Companies, chairman of the board of directors of the Mystic Iron Works, president and trustee of the Mystic Steamship Company and director of the New England Coal and Coke Company.

Following his graduation from Annapolis, Capt. MacKay served as lieutenant of the naval brigade from 1896 until 1898. He also served with the navy in the same capacity during the Spanish-American war and later was made a captain.

In 1887 Capt. MacKay first came to Boston to hold a series of responsible positions with the Bay State Gas Company and the Boston Gas Company. After the Spanish War he served the Boston Consolidated Gas Company as engineer of construction, and in 1910 was elected vice-president of the New England Gas and Coke Company. He became president of the New England Manufacturing Company in 1914 and was elected president of the Beacon Oil Company five years later.

Capt. MacKay was past president of the New England Association of Gas Engineers, the Guild of Gas Managers, the American Gas Institute and New England Society of Naval Engineers.

He was a member of the Society of Gas Lighting, Boston Society of Civil Engineers, Boston Chamber of Commerce, United States Chamber of Commerce, American Gas Association, Army and Navy Club and the Exchange Club.

ACCOUNTING SECTION

A. S. CORSON, Chairman

H. W. HARTMAN, Secretary

F. L. GRIFFITH, Vice-Chairman

By-Product Coke Accounting

By WM. F. R. MÜNNICH

Philadelphia Electric Company

Contribution of the General Accounting Committee.

COKE produced as one of the by-products of the manufacture of gas is usually an item of considerable volume and the economy with which gas can be produced depends largely on the successful disposition of such coke. It is, therefore, necessary that the accountant devise the means to accurately record the details of this end of the business so that an intelligent idea may be had of it.

An accounting procedure which gives all pertinent data necessary to prepare statements which will enable the proper control of this activity is briefly described below.

Classification

The classification, which is listed below, has been set up to replace in part the usual residual credit and debit accounts found among gas production expense accounts. Account names only are given, descriptive text having been eliminated to conserve space, since it is felt that the nature of the accounts will be readily understood from their titles and from the description of the accounting procedure.

Operating Accounts

Coke Produced
 Stock Value
 Commercial Size Coke Produced
 Breeze and Dust Produced
 Coke Sales Revenue
 Wholesale—Carload and Barge Lots
 Overs Ungraded
 Egg
 Furnace
 Range
 Pea
 Breeze
 Dealers—Less Than Carload Lots
 Egg
 Furnace
 Range
 Pea
 Breeze
 Domestic
 Egg
 Furnace
 Range
 Pea
 Breeze
 Company Use
 Coke—Gas Boiler
 Coke—Gas Generator
 Coke Breeze—Boiler
 Other (Used in Company Buildings)
 Coke Expense
 Stock Value
 Commercial Size Coke Sold
 Breeze and Dust Sold

Production Expense

Superintendence
 Labor
 Power
 Rent
 Supplies and Expenses
 Maintenance of Coke System Structures
 Maintenance of Coke System Equipment

Selling Expense

Sales Supervision
 Sales Salaries and Commissions
 Sales Supplies and Expenses
 Delivery Expense:
 Delivery Superintendents' and Clerical Salaries
 Delivery Labor
 Motor Vehicle Expense (Company Owned Equipment)
 Supplies and Expenses
 Hired Vehicles
 Freight (Sales to Consumers and Others)
 Other Sales Expense

General Expense

Advertising
 Demonstrations
 Accounting Department Salaries and Expenses
 Credit and Collection Salaries and Expenses
 Uncollectable Accounts
 Injuries and Damages
 Other General Expense
 Estimated Coke Expense

Balance Sheet Accounts

Coke Expense Adjustment (Deferred Account)
 Coke Stock

Coke Produced

All coke produced is charged to the "Coke Stock" account and credited to the "Coke Produced" accounts by journal entry at the close of each month. The value used is the average revenue per ton which it is expected to realize from the sale of the coke, less average expenses per ton. The object of this, of course, is to allow proper credit to gas production expenses for by-product coke produced.

Coke Sales Revenue

Revenue derived from coke sales, as well as company use, it set up in subdivisions as shown, which information is of interest to the Coke Department.

Coke Expenses

Coke sales made in a given month are charged out of the "Coke Stock" account to "Coke Expense—Stock Value" accounts at the average stock value. This is a partial offset to the "Coke Sales Revenue" accounts, the remaining offset being the coke production, selling, and general expenses.

Charges to these last three groups of expenses are distributed as incurred to the proper accounts. At the end of each month, these accounts are closed into the deferred account "Coke Expense Adjustment." Estimated expenses applicable to coke actually sold are then charged to the "Estimated Coke Expense" account, the offsetting credit being made to the "Coke Expense Adjustment" account.

This procedure is followed until December of each year at which time actual charges are restored to the accounts originally charged and the deferred account and the "Estimated Coke Expense" accounts are brought into balance.

The reason for this journalization is to synchronize production, selling, and general expenses with revenue. If this were not done, the relation of expenses to revenue would fluctuate considerably since expenses applicable to sales in specific months are not always incurred in those months. The net result obtained from coke operations is applied as a credit to gas production costs and it can readily be seen that these latter costs would tend to fluctuate widely if no effort were made to equalize coke expenses with coke sales.

Conclusion

From the foregoing, it will be seen that stock is charged with coke produced at the anticipated net revenue to be derived from the sale of such coke; also that coke expense is charged with the average stock value of coke as it is disposed of, as well as the average production, selling, and general expenses, except in December when these latter are included on an actual basis.

Any fluctuation between the anticipated net revenue and the actual net revenue occurs at the time of sale. Since adjustments in the average rates used are made from time to time as experience dictates,

this fluctuation should not be of any considerable magnitude.

With a study of the results of coke operations being made periodically and with especial attention being directed to the rate at which coke is charged into stock, the method outlined will enable proper credit to be given to the gas production accounts without violent fluctuations.

McCarter Medals Awarded

HARRISON M. CRAIG, employee of the Customers' service division of The Philadelphia Gas Works Company, Philadelphia, Pa., was presented with a McCarter medal and certificate at President Lauer's staff meeting on February 12 for outstanding work in life saving. Mr. Craig, while on duty, had successfully applied the Schafer prone pressure method of resuscitation on a woman who had been overcome by gas.

H. B. Anderson, engineer of distribution, introduced Mr. Craig to C. N. Lauer, president of the company, who, in turn, presented the medal and certificate on behalf of the American Gas Association. President Lauer, in his citation, congratulated Mr. Craig upon his persistence and promptness of action in administering first-aid.

The award to Mr. Craig brings the number of McCarter awards to employees of The Philadelphia Gas Works Company to a total of 23. R. B. Inman, supervisor of the safety division, directs the company's safety work.

Consolidated Gas Co. of N. Y.

Presentations of McCarter medals and certificates to employees of the Consolidated Gas Company of New York and affiliated companies were made recently as follows:

To Philip Robinson, Cornelius B. Murphy, Harold Irvin Campbell and Vincent Patrick Walsh, employees of the customers' service department, by O. H. Fogg, vice-president, on December 17, 1934, at a safety meeting.

To Daniel Coughlan and James Flynn, employees of the commercial buildings department, by W. Cullen Morris, vice-president and chief engineer, on December 6, 1934.

To Charles Hahn, Jr., an employee of the Central Union Gas Company, by F. R. Barnitz, president, on December 10, 1934.

To Samuel Sylvester, an employee of the Northern Union Gas Company, by J. J. Beisiegel, assistant to president, on December 12, 1934.

To Thomas F. Brouder, an employee of the New York and Queens Gas Company, by T. L. Goodwin, Jr., treasurer, on December 5, 1934.

60 Years' Service Rewarded



After sixty years' uninterrupted service, H. J. Gasson (left), was retired from active service by the Washington Gas Light Company, Washington, D. C., March 1. The picture shows Mr. Gasson being congratulated by Marcy L. Sperry, president of the company. Mr. Gasson, who is 84 years of age, was employed in 1874 as meter repairman. He was made chief clerk of the meter shop in 1911 and has continued in that capacity up to the present time.

Rental Plan Featured

GAS SERVICE COMPANY, Kansas City, Mo., new business departments started March 2 on a water heater campaign which features for the first time a rental plan. The campaign will continue throughout the year and customers will be offered the opportunity at any time during 1935 to purchase an automatic storage water heater on the rental basis. The rental plan already has stimulated a great amount of enthusiasm in the new business department and it is believed it will provide an opportunity for a large amount of additional water heating business.

A quota of 5,810 water heaters has been set for the departments to sell this year, this figure being approximately four times more than were sold by the Gas Service sales groups in 1934.

New Directors

At a recent meeting of the stockholders of the Washington Gas Light Company, Everett J. Boothby, Gary T. Grayson, Wilton J. Lambert, Christopher H. Pope, Marcy L. Sperry, Sidney F. Taliaferro and Corcoran Thom, were elected directors for the ensuing year. Mr. Boothby, who is vice-president and general manager of the company, was elected to fill the vacancy caused by the death of Robert D. Weaver.

SERVICE TO THE SMALL COMPANY

By G. W. STILES

Vice-President, Portland Gas Light Co., Portland, Maine

From time to time different company members of the A. G. A. have asked me what use we make of the American Gas Association. Being a small company and not carrying any engineering organization, we do from time to time rely upon the A. G. A. to furnish us with statistics and also services by their engineering force on problems which arise in our territory. In one case in particular, an A. G. A. industrial engineer made a visit to Portland and by his efforts and information he was able to secure one of our large industrial customers; we are today still furnishing this customer approximately 18,000,000 cu.ft. of gas per year.

We have also used Association engineers to make contacts for us in New York with some of our industrial concerns which, of course, has saved this company that expense.

We make use to quite an extent of the rate service which the A. G. A. renders, the summary of gas statistics, the bulletins and pamphlets and instructions issued for commercial and industrial men. On account of our selling nothing but appliances approved by the testing laboratory, we have been able to maintain the highest standard of gas appliances used in our territory and, this being the case, have quite materially reduced our servicing expense, inasmuch as we give free service on all gas appliances.

Last, but not least, the Convention which is held once a year enables our members to keep up to date in the different gas burning appliances and also to keep up acquaintance with men in the industry and by contacts with them to gain information which otherwise would not be available to a small company.

COMMERCIAL SECTION

F. M. ROSENKRANS, Chairman

J. W. WEST, Jr., Secretary

C. E. BENNETT, Vice-Chairman

Building Business with a Gas Sales Program

By W. C. BELL

Vice-President, New England Power Association

The First Major Objective—Holding Present Load

The plan worked out to help hold present load can be summarized as follows:

DEVELOP CUSTOMER SATISFACTION

- a. Build and hold customer satisfaction by means of education of salesmen and other employees.
- b. Planned schedules of store demonstrations.
- c. Surveys of educational institutions to effect replacement of out-moded equipment.
- d. Development of greater use of gas service by all employees.
- e. Standardization of service and inspection routine.
- f. Analysis of rates, with recommendations for revisions.

MEETING COMPETITION OF OTHER FUELS

- a. Study by Engineering Department of service and operating costs of competing fuels.
- b. Market survey of present installations of gas and competing fuel equipment.
- c. Market surveys of dealers selling gas and competing fuel equipment.

MERCHANDISING PLANS

- a. Determination of sales force necessary to properly serve each territory.
- b. Bonus system for employee leads developing into sales of major appliances.
- c. Classification of customers according to their possible greater use of service.
- d. Sales inducements to replace out-moded appliances.

The Second Objective—Restoring Lost Customers,—Is Divided Into Two Classes

- a. Customers discontinued for non-payment.
- b. Customers discontinued for reasons other than non-payment.

The non-payment cases are analyzed by the Treasury Department and where possible reconnection is established on a weekly collection basis or by the use of prepayment meters. Where service has been discontinued for reasons other than non-payment the cases are investigated by the company manager and special sales effort and weekly collection plans applied to suit the individual case.

At periodic intervals campaigns are conducted in which a bonus is avail-

mean that operating economy can be neglected. Greater economy is essential if the lower rates necessary to get and hold the business are to be profitable, but economy alone cannot save the business.

Analysis of the Problem

We organized a committee composed of management officials, sales and treasury executives, and rate and operating engineers and turned over to them the job of analyzing the problem of increasing the volume of business. Studies of the various conditions affecting the industry were made, with analyses of the steps necessary to restore the business to its rightful place as a modern, useful and efficient service.

Rates were carefully analyzed and consideration given to the value of the business to be gained by application of reductions in each company and to each class of service.

Plant and distribution facilities were thoroughly investigated to determine their ability to provide adequate service with the addition of increased load.

The various gas services of cooking, water heating, refrigeration and house heating were each studied to establish the amount of sales effort and expense necessary to develop a maximum volume of business.

Service organizations were studied to ensure satisfactory continuity of service for gas appliances.

Employees who contact customers were considered as to their part in the promotion of greater use of gas and increased good-will toward the gas company.

Finally a plan was worked out for the coordination of all these various functions into a business-building program.

The Plan

The Gas Sales Program recognized four major objectives:

1. Holding Present Load.
2. Restoring Lost Customers.
3. Increasing Customer Consumption.
4. Developing New Business.

Now let me discuss the methods developed to accomplish these four objectives:

WE are all familiar with the trend of earnings in the gas business during the past few years. Output has steadily declined. Pressure from competitive fuels has forced rates lower and lower. It has been impossible to reduce expenses sufficiently to offset the serious decline in earnings. Similar conditions have existed before in the gas business and each time the industry has dug itself out of trouble and gone forward.

Aggregate figures for the larger gas companies in Massachusetts indicate that they expanded up to the year 1931, when output, gross earnings and number of customers reached all-time peaks. In the years 1932 and 1933 serious declines occurred and companies were faced with higher wages, shortened hours, and increasing costs of fuel and supplies as a result of the New Deal.

The gas companies affiliated with the New England Power Association were no exception to the general trend, and it became apparent in 1933 that some positive action was imperative if we were to meet the serious situation confronting us.

An analysis of our own gas business made late in 1933 showed that while we were suffering a serious loss in meters removed for various causes, the rate of decrease in output and in gross revenue was three times as great as the loss in meters, and the loss in net income was five times as great.

Further analysis showed that much of this lost business has been absorbed by competing fuels. Coal and oil, while furnishing less efficient service, offered a saving to the public and since material investments for service facilities were not required, the distribution of these competitive fuels expanded rapidly.

Electricity has the appeal of a newer and more widely publicized service, and the tremendous acceleration of electric refrigerator sales tends to displace gas service in the home.

From these analyses it was evident that the gas business was losing ground and that competition from other fuels was a definite threat to recovery even with the return of improved business conditions.

This led us to the conclusion that the answer to our problem was to increase sales at rates which would yield a profit and get and hold the business. I do not

Presented at the annual convention of the New England Gas Association, February 14, 1935.

able to employees responsible for securing the reconnection of lost customers.

All removal orders are referred to company managers.

The Third Objective—Increasing Customer Consumption—Is Divided Into Four Classes

1. PROMOTION

- a. Sales effort directed toward installation of modern automatic gas kitchens.
- b. Removal of all auxiliary equipment using competing fuels.
- c. Installation of modern display kitchens in all stores.
- d. Definite programs of publicity and planned activities in these kitchens.

2. DEVELOPMENT OF ADDITIONAL USES

- a. Promotion of modern gas cooking, refrigeration, water heating and house heating.
- b. Special training of salesmen to provide service fitted to individual customer's requirements.
- c. Demonstration of such new developments as speed burners and conversion water heating equipment.
- d. Coordinated sales and advertising schedules, using newspaper advertising, bill enclosures and direct mail.

3. DEALER COOPERATION

The importance of good-dealer cooperation is emphasized in the program.

Definite policies are set up to encourage dealers to participate in sales activities on a profitable basis. Company display and demonstration facilities are made available to dealers.

Direct mail to architects and builders encourages the design and redesign of kitchens for complete use of gas. Planned promotional publicity constantly features modernization.

4. LOAD BUILDING BUDGETS

Every company establishes a schedule allocating sales effort and expense to accomplish the objectives of the program.

The Fourth Objective—Developing New Business

- a. General publicity presents gas as a modern service and local publicity covers new developments in the industry.
- b. Information is distributed to employees concerning news of the business.
- c. Educational talks and inspection trips through gas plants.
- d. Further development of special uses of gas such as house heating and air conditioning.

The Gas Sales Program was presented to the various gas company organizations at a series of meetings held early in 1934. Committees for the operation of the plan were appointed in each company. A central supervising organization actively followed the progress of the program through-

out the year, issuing periodic bulletins detailing complete information as to plans and methods being used in different companies. Employee manuals were issued and supplemented from time to time with additional data on subjects of interest to the organization. Essay contests open to members of the organization were conducted and everything possible was done to stimulate enthusiasm and maintain interest in the program throughout the entire personnel of the organization.

1934 Results

Now, what has been accomplished in 1934, the first year in which this plan has been in operation?

This program was based on the interest and activities of all employees and we credit a large part of its success to their enthusiastic support. During the year 1934 our companies held 154 meetings, with a total attendance of 7,734 employees. Of this number, 71 were company meetings attended by employees from all departments, while 83 departmental meetings were attended by 1,459 employees of individual departments. Two hundred and eighty-four employees were enrolled in American Gas Association educational courses, with instruction classes being conducted by company officials. Of 5,734 prospect leads turned in by employees 23% resulted in the sale of more than 1,300 major appliances. In addition to the regular payment for these leads, a load builder award is presented employees submitting six leads which result in sales. This award consists of an appropriate gold pin, and forty-five employees earned this recognition in 1934. One employee has turned in leads resulting in twenty-four sales.

The sales of appliances have shown definite improvements, water heaters increasing 15%, ranges 17%, refrigerators 55%. House heating sales increased from seven in the preceding year to 333. Reductions in house heating rates and increased sales effort were the principal reasons for this increase. Greater sales would have been possible if more trained salesmen had been available.

Merchandise sales in dollar volume show an increase of nearly 60%, while the estimated annual consumption of appliances sold is more than double that for 1933.

At the end of 1933 we had 2.1% fewer gas customers than in 1932. At the end of 1934 we show a gain of five-tenths of one per cent over 1933 figures.

The cumulative effects of the sales made during 1934 are not reflected in the figures for output for the full year. This is particularly true in house heating, where we have benefited by only two or three months' use prior to January 1, 1935. Output for December 1934 was slightly above December 1933, but on account of lower rates, gross earnings are still below the previous year.

Plans for 1935

We are satisfied that we have made a good start toward the successful promotion of sales and that continued application of our plan will show further improvements in our gas business.

The 1935 Gas Sales Program is a revision of the 1934 Plan, containing the same fundamental ideas and based upon the same policy of securing the fullest cooperation from every member of the gas company organization.

A series of meetings are being held to present the 1935 program to the companies. With the aggressive sales activities planned for the year, supported by an enlarged sales personnel and intensive advertising, we have every confidence that we can improve on the results obtained last year and stop the downward trend in output and earnings.

In Conclusion

1. The gas business is facing the worst competitive situation since most of us have been in the business.
2. Fixed charges and charges not subject to control by the management, such as fuel, labor and maintenance, represent a large part of the cost of doing business.
3. Shrinkage of business and declining rates produce a situation where earnings shrink much more rapidly than costs, thus reducing net earnings drastically. In the case of many small gas companies net earnings have disappeared entirely.
4. Oil competition, while weakening a little as to range oil burners, is more aggressive than ever in commercial, industrial and house heating fields.
5. Lower electric rates being forced by all Government agencies will drive electric utilities to greater merchandising effort, thus increasing competition for the gas cooking load, and making a real sales plan more essential than ever.
6. It is essential that sales be increased, and to offset the decline in rates caused by competitive forces, and increased cost of labor and material, sales must be increased materially if net earnings are to be maintained.
7. To bring about increased sales requires a general plan embracing the entire organization. Everyone in the organization must realize that his job and his income depends upon selling more gas. It is not a problem for the sales department alone. It is the problem of everyone in the company. All the tools must be used—market analysis—dealer outlets—rental purchase plans—employee leads—if the necessary answer is to be obtained.

So, I say to all of you that it is important that each gas company—

Analyze its own problems—

Develop a plan for increasing sales—

Put the necessary effort into the plan to make it work.

HOME SERVICE COMMITTEE

MARGARET NEVINS, Chairman

JESSIE McQUEEN, Secretary

Regional Sales Conferences Welcome Home Service

HOME service played a conspicuous part in the three regional sales conferences sponsored by the Commercial Section of the American Gas Association which were held during February. The increasing emphasis on home modernization and the inherent possibilities of home service work combined to focus attention on these meetings. Many excellent papers brought out the salient features of today's home service program. Following is a brief account of the meetings:

Chicago

At the Mid-West Regional Gas Sales Conference, held in Chicago, the home service program on February 16 was well attended by home service people over a wide territory and many sales managers personally interested in this work. Isabel Fallon, home service director of the Western United Gas & Electric Company, Aurora, Illinois, presided as chairman. Among the speakers was Margaret Nevins of The Syracuse Lighting Company, Inc., Syracuse, N. Y., and chairman of the A. G. A. Home Service Committee, who spoke on the subject "Home Service as an Aid to Sales." In the home service program of the Syracuse Company, Miss Nevins has successfully carried on food demonstrations, interim demonstrations on various appliances and other direct aids to sales.

B. T. Franck, coordinator of sales in the American Light & Traction Company of Chicago, in a paper on "Home Service and Home Modernization" brought out the development of home service work which ties in perfectly in the present industry plan of improving home conditions with modern equipment. In a paper on "Trade Dealer Contacts" H. H. Koelbel, director of cooperative merchandising in the Consumers Power Company in Michigan, stated that if he were to select only one means of assistance in a trade dealer cooperative plan, he would choose home service above all others, since it seems to do more to fulfill the real needs of the dealer and is appreciated more by the dealer than any other form of aid.

A symposium of three-minute talks by home service directors in the mid-west brought out the value of various divisions of home service work. Among those reporting were: Mrs. Ella Lambert

of the Milwaukee Gas Light Company; Mary L. Dilley, Central Illinois Light Company, Springfield; Claribel J. Adams, Washtenaw Gas Company, Ann Arbor, Michigan; Mrs. Allene Burns, Southern Indiana Gas & Electric Company, Evansville; Mabel Claire Atwood, Grand Rapids Gas Light Company, Grand Rapids, Michigan; and Irene Hickey, Detroit City Gas Company, Detroit, Michigan.

Skit Contest

Be sure to enter the Skit Contest, sponsored by the Home Service Committee, for the glory of your company and the distension of your pocket book. Skits are badly needed, for use in employee gatherings as well as for customer groups, because they offer a freshness of viewpoint that is very welcome.

Won't you encourage as many of your co-workers as possible to write skits for this contest? And be sure you don't fail to give us the benefit of your own talent!

At the luncheon meeting which followed, Mrs. Anna J. Peterson of The Peoples Gas Light & Coke Company presided, and in her own inimitable style made the meeting a most enjoyable occasion. The group was shown a movie "Heart of the Home" which is being used by The Peoples Gas Light & Coke Company as an aid in promoting range sales. At a short business meeting which followed, it was voted to organize a permanent group of mid-western home service directors to work as a part of the Regional Sales Conference. Irene Hickey of the Detroit City Gas Company was elected to head the group for the coming year.

Dallas

In Dallas, on February 23, a home service program was conducted as a part of the Southern-Southwestern Regional Sales Conference. This meeting was in the form of a breakfast program and was attended by fifty home service women and sales executives. Nell Read of the San Antonio Public Service Company presided as chairman.

At the start of the program W. L. Hudson, chairman of the local sales con-

ference, introduced those present and spoke of his interest in a group meeting of the type being held. Later, in closing the meeting, Mr. Hudson expressed his belief that home service programs would continue as a very definite part of the sales conference programs. F. M. Rosenkrans of The Gas Service Company, Kansas City, spoke of his regard for the uses to which home service can be put in a company, and as chairman of the A. G. A. Commercial Section outlined the program of work under way under the Home Service Committee.

Albertine Berry, home service director of the Lone Star Gas Company, outlined the diversified program being conducted in their properties to make home service of definite use to every type of customer. She spoke of radio work, colored maids' classes, employee classes, talks for salesmen, lecture demonstrations, women's club parties and many other subjects. The home service work of this company is under the direct supervision of W. C. Grant, director of publicity and public relations, and his remarks brought out the wide territory that their company attempts to reach with a minimum number of home service women.

Dorothy Shank of the Research Kitchen in the American Stove Company, in her subject "Gas, the Ideal Cooking Fuel" outlined the many controversies concerning cooking operations that have been brought out in gas and electricity claims. Miss Shank contends that in the tests she has made the superiority of gas as a cooking fuel is evident. In the symposium of three-minute talks by local home service directors, the work was outlined by Mildred Clark of the Oklahoma Natural Gas Company, Oklahoma City; Mrs. Carroll Miller, United Gas System, Houston, Texas; Madeline Allen, Peoples Gas Company, Port Arthur, Texas; and Mrs. Eva Pender, United Gas System, Beaumont, Texas.

It was likewise voted in this group to organize home service directors into a permanent group, and Albertine Berry of the Lone Star Gas Company was elected chairman for this year.

Pittsburgh

A home service program was also part of the Eastern Natural Gas Regional Sales Conference in Pittsburgh on March 2. At this meeting, Karen Fladoes of

the Equitable Gas Company, Pittsburgh, presided as chairman. In the absence of Margaret Nevins of Syracuse, chairman of the Home Service Committee, Miss Fladoes read her paper "Home Service as an Aid to Sales." At this meeting Dorothy Shank delivered again her paper "Gas, the Ideal Cooking Fuel."

At this meeting Harvey Schwab, director of the Alleghany County housing survey in Pittsburgh, spoke on "Prospects for Home Modernization." Mr. Schwab said the purpose of the survey was to determine what work needed to be done and how much would be undertaken by the property owner provided reasonable financing could be arranged. A survey was made to acquaint property owners with provisions of the National Housing Act and to bring the construction industry and prospects together in a mutually beneficial contract. Copies of Mr. Schwab's paper are available from the home service counsellor of the American Gas Association.

The following home service directors participated in the symposium of short talks on home service activities: Anne McManus, The East Ohio Gas Company, Youngstown, Ohio; Ruth Sheldon, Washington Gas Light Company, Washington, D. C.; Flora Dowler, Binghamton Gas

Works, Binghamton, N. Y.; and Mrs. Martha Wales, United Natural Gas Company, Oil City, Pa.

In organizing a permanent group of home service directors for the Eastern Natural Gas area, Hulda Ungericht of The Ohio Fuel Gas Company was elected chairman to develop the work for the coming year.

In all three of the Conferences—Chicago, Dallas, and Pittsburgh,—Jessie McQueen, home service counsellor of the American Gas Association, discussed "Home Service Activities in the American Gas Association." In her address Miss McQueen spoke of the growth of home service work, the division of numbers of departments throughout the country and special activities under way. She also spoke of the evident need of comprehensive records to be kept by home service directors, as was indicated by the recent questionnaire on home service activities.

The regional home service conferences are being especially developed by the Home Service Committee to strengthen the work locally as a part of regional sales plans and are taking the place this year of the national home service conference, which has been a successful feature of A. G. A. home service work for a period of years.

New England Home Service Meeting

A HOME service luncheon and program was held in connection with the New England Gas Association Convention in Boston on February 15. Mrs. Lyda Flanders of the Worcester Gas Light Company presided as chairman.

Short talks were given by a number of executives particularly interested in home service work, including J. J. Quinn, Boston Consolidated Gas Company; Louis Fiorani, The New England Power Company; R. A. Malony, The Bridgeport Gas Light Company; R. J. Rutherford, New England Gas & Electric Association; W. F. Norton, Public Service Company of New Hampshire; and R. J. Canniff of the Pittsburg Water Heater Company.

Mr. B. J. Bean of the Worcester Gas Light Company in a paper on "Methods—Unlimited" challenged the study of every person interested in home service work. Jessie McQueen of the American Gas Association read a paper on "Home Service Activities in the Association." Miss McQueen's paper was followed by a forum conducted by Mrs. Arra Mixer of The Hartford Gas Company on "Methods of Presenting Gas Appliance Information to Groups." The subject was discussed by twelve home service directors throughout the New England States.

Miss Margaret Fossett of the Boston Consolidated Gas Company was elected chairman of the group for the coming year.

An Advertising Idea

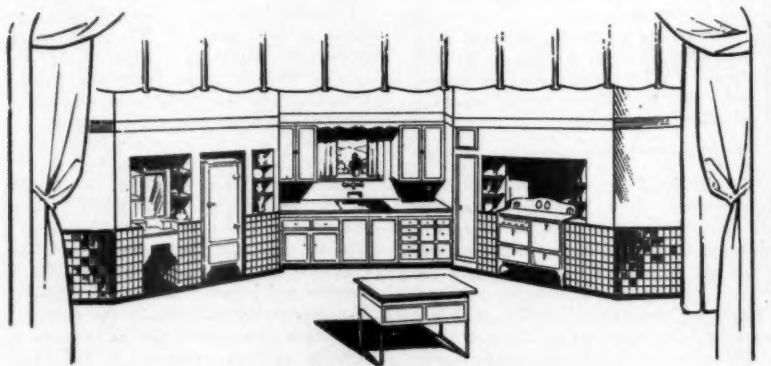
P. J. F. Horton, writing under the name of G. Howie Squintz in "Home Service News" of the B. C. Electric Railway Company, suggests that of all the advertised remedies for halitosis, athletes' foot, B. O., ashtray breath, coffee nerves, morning mouth, dishpan hands, etc. ad infinitum, continuous hot water from a gas water heater remains the best specific. Advertising men please copy.

Spirit of Enterprise

Is not our real danger that of destroying the spirit of business enterprise?

Many of our mentors today start from the false premise that business is cut-and-dried routine, that it is self-sufficient and self-perpetuating. They fail to sense the deadening effect upon the spirit of men through the endless harassments; the increasing political toll through taxation; the competition from one's own government in a hundred fields; the restrictions, regulations, investigations, supervision, often administered by those who know little of the material factors involved, and nothing of the spiritual.

—Merle Thorpe in *Nation's Business*.



Cooking Schools Feature Model Kitchen

THE model kitchen sketched above has been constructed by the Southern Counties Gas Company of California, Los Angeles, at a cost of approximately \$400 to be used at sixteen daily newspaper cooking schools to be held continuously from March 6 to June 21. It is expected that these schools will attract a total attendance of 50,000 or more and the company hopes to secure interesting data from a tabulation of the attendance cards.

The walls of the kitchen are eight feet high. With the end drapes the kitchen will have a flexible spread ranging from twelve to thirty-four feet and a depth ranging from six to ten feet. The tile is soft green and the upper wall an attractive ivory.

The company is providing the home service director, her assistant, the daily programs, attendance tickets and 300 inches of display advertising.

In addition to these schools of the daily newspapers, the company is planning for a limited number of schools with weekly newspapers, according to W. D. Thurber, advertising manager.

TECHNICAL SECTION

C. A. HARRISON, Chairman

H. W. HARTMAN, Secretary

F. A. LYDECKER, Vice-Chairman

Strong Program Will Feature 1935 Distribution Conference

By ERICK LARSON

Long Island Lighting Co., New York, N. Y.

PLANs of the Program Committee for the 1935 Distribution Conference to be held at the Hotel Cleveland, Cleveland, Ohio, May 2 to 4, have developed sufficiently to permit of announcing the first tentative program.

At the regular sessions a variety of timely and interesting reports will be presented by well-known specialists. W. M. Henderson, superintendent of gas distribution at Los Angeles, Calif., will present and discuss "Main Extension Fittings." Mr. Henderson's practice permits tying into existing mains without discontinuing existing service or exposing the workers to gas fumes.

"Appliance or Low Pressure Regulators" will be presented by F. O. Suffron, research engineer of the A. G. A. Testing Laboratory. The Laboratory has conducted an intensive research on appliance regulators and their effect on the efficiency of burners. Indirectly, the study indicated that proper regulation may have a beneficial effect in decreasing the servicing required on appliances.

"Rubber Compounded Gaskets for Pipe Joints and Clamps" will be presented jointly by K. R. Knapp of the A. G. A. Testing Laboratory and E. Torgler of the Dresser Manufacturing Company. The subject of joints has been covered extensively in the past few years with the exception of the gasket itself.

The Subcommittee on Pipe Coatings and Corrosion, under Charles F. Turner of Cleveland, has arranged for the exposure of buried specimens of coated pipe and will present an important plan whereby utilities desiring to make use of the valuable experience of Dr. Ewing may arrange for his contacting where his services would be most valuable. Dr. Ewing will also present his annual report and have available for inspection at the hotel specimens to illustrate his work. There will be illustrations of the latest methods used in testing coatings.

"The Public Utilities' Survey Commission of Pittsburgh, Pa.," will be the subject of a paper by Dr. R. W. Miller of Pittsburgh, who has been intimately connected with this subject. This paper will include a survey on natural gas systems.

"Latest Developments in Portable Equipment" will be treated by E. H. Eacker, Asst. Engineer of Distribution in Boston, who has some innovations in equipment which have resulted in distinct economies.

"Service Regulator Testing" will be presented by Allen D. MacLean, chief engineer of the Pittsburgh Equitable Meter Company. Mr. MacLean is a recognized authority on pressure regulation, having contributed considerable in theory and practice to this subject.

"Factors and Trends in Meter Maintenance," by R. W. McClenahan, Assistant Manager of the American Meter Company, will be a valuable contribution, since it will embrace an actual study of meter performance after repairing.

"The Need for Improving the Performance of Customers' Meters from the Customers' Standpoint," by H. B. Andersen, Engineer of Distribution, The Philadelphia Gas Works Company, will be noteworthy to all interested in meters, as it proposes some definite developments in small meters.

The Subcommittee on Meters and Metering with David P. Allen of Washington, D. C., as Chairman, will have a lively report indicative of the renewed interest in small meters as a result of the rapid changes occurring in gas distribution and utilization.

Employee Sales Training

The Subcommittee on Pipe Joints, under A. H. Anderson of Detroit, as Chairman, will report on the latest developments in screw, slip coupling and welded joints.

The "Effect of Sales Policies in Distribution Employee Training," by T. J. Perry of Brooklyn, will present the indirect but beneficial effects to distribution department employees resulting from providing them with the information and instruction necessary to furnish intelligent sales leads.

"Installing and Servicing Appliances," by H. D. Lehman of Philadelphia, keeps pace with the changing character and service requirements of present-day developments in utilization appliances.

Sufficient time has been allotted to each person on the program to present his particular subject thoroughly and to answer all inquiries emanating from the floor. Most of the papers will be supplemented by slides or displays.

On Friday, May 3, the afternoon will be devoted to an inspection of the

A. G. A. Laboratory and equipment connected with research work. R. M. Conner, Director of the Laboratory, will give a brief description of the arrangements at the Hotel before the buses leave for the Laboratory where guides will conduct each group and specialists will be on hand to explain.

The Laboratory has special sections devoted to the research on and testing of central heating systems, space heaters, accessories, ranges, water heating and industrial methods and equipment. Special rooms for manufacturers to conduct their own experimenting, special research rooms, a photographic studio, library, gas storage, gas mixing and control equipment, and special apparatus for all types of gas research will be open for inspection. No matter what the particular interest of each may be the Laboratory provides some interesting features, as research has been conducted in the chemical, physical, electrical and practical phases of gas manufacture, distribution and utilization.

No session is contemplated for Saturday afternoon due to the Friday evening meetings, and also to provide additional time for personal contacts or more detailed inspection at the Laboratory. By special arrangement with Mr. Conner, any particular features of the Laboratory will be available and open for examination on Saturday afternoon.

The tentative program follows:

THURSDAY, A.M., MAY 2

Opening Remarks

Erick Larson, Chairman, Distribution Committee, New York, N. Y.

Greetings

Alexander Forward, Managing Director, American Gas Association.

Paper: Main Extension Fittings

W. M. Henderson, Supt., Gas Disbn., Los Angeles Gas & Electric Corp., Los Angeles, Calif.

Paper: Appliance or Low Pressure Regulators

F. O. Suffron, Research Engr., A. G. A. Testing Laboratory, Cleveland, Ohio.

THURSDAY P.M., MAY 2

Paper: Rubber Compounded Gaskets for Pipe Joints and Clamps

K. R. Knapp, A. G. A. Testing Laboratory, Cleveland, Ohio.

Report: Subcommittee on Pipe Coatings and Corrosion

C. F. Turner, Chairman, East Ohio Gas Co., Cleveland, Ohio.

Report to the Twelfth Annual Distribution Conference

Dr. Scott Ewing, Research Associate, U. S. Bureau of Standards, Washington, D. C.

*Paper: The Public Utilities Survey Commission of Pittsburgh, Pa.

R. W. Miller, Hope Construction and Refining Company, Pittsburgh, Pa.

Paper: Latest Developments in Portable Equipment

Earl H. Eacker, Asst. Engr. of Distribution, Boston Consolidated Gas Co., Boston, Mass.

*Paper secured through courtesy of the Natural Gas Department.

FRIDAY A.M., MAY 3

Paper: Service Regulator Testing

Allen D. MacLean, Chief Engr., Pittsburgh Equitable Meter Co., Pittsburgh, Pa.

Paper: Factors and Trends in Meter Maintenance

R. W. McClenahan, Asst. Mgr., American Meter Co., Philadelphia, Pa.

Paper: The Need for Improving the Performance of Customers' Meters from the Customers' Standpoint

H. B. Andersen, Engr. of Distribution, The Philadelphia Gas Works Co., Philadelphia, Pa.

Report: Subcommittee on Meters and Metering

David P. Allen, Chairman, Washington Gas Light Co., Washington, D. C.

FRIDAY P.M., May 3

Inspection Trip—

A. G. A. Testing Laboratory

(The delegates will convene at 1:30 p.m. in the Hotel Cleveland, for a preliminary statement by R. M. Conner, outlining the plans for inspection of the Laboratory, and the necessary arrangements made in regard to routing of buses, etc., to the Laboratory.)

SATURDAY A.M., MAY 4

Report: Subcommittee on Pipe Joints

A. H. Anderson, Chairman, Detroit City Gas Co., Detroit, Mich.

Paper: Effect of Sales Policies on Distribution Employee Training

T. J. Perry, Supt., Customers' Service Division, The Brooklyn Union Gas Co., Brooklyn, N. Y.

Paper: Installing and Servicing Appliances

H. D. Lehman, Supt., Customers' Service Division, The Philadelphia Gas Works Co., Philadelphia, Pa.

Report: Subcommittee on Cast Iron Pipe Standards

C. C. Simpson, Jr., Chairman, Consolidated Gas Co. of New York, New York, N. Y.

has taken a prominent part in the work of the Distribution Committee in the past.

The following have been requested to act as discussion leaders:

F. M. Goodwin of the Boston Consolidated Gas Company, Boston, Mass., to preside at the dinner conference on pipe

J. D. von Maur of the Consumers Gas Company of Toronto, Toronto, Ont., Canada, to preside at the dinner conference on meters.

F. C. Weber of The Brooklyn Union Gas Company, Brooklyn, N. Y., to preside at the dinner conference on customers' servicing and appliance installation.

H. E. Bates of The Peoples Gas Light & Coke Company, Chicago, Ill., to preside at the dinner conference on change-over from manufactured to natural gas.

H. W. Alrich of the Consolidated Gas Company of New York, New York, N. Y., to preside at the dinner conference on safety practices.

Each dinner conference group will be assigned a private dining room sufficient for its needs so that ample opportunity will be afforded for discussion by all those present.

Reservations

A reservation blank will be forwarded to members well in advance of the Distribution Conference, with a letter explaining in more detail the arrangement in regard to the conduct of the various dinner conferences. Members are urged to make their reservations promptly by mail, as this will assist the committee in completing its plans to accommodate comfortably all those who wish to attend. Tickets will be issued in the order in which reservations are received.

Registration Fee

The following resolution was adopted at the meeting of the Managing Committee of the Technical Section held in Cleveland, December 15, 1934:

"That a registration fee be collected for the 1935 Technical Section Conferences to cover the expenses thereof, and that any surplus resulting from this registration fee be used to defray necessary research activities of the respective divisions of the Technical Section."

It has accordingly been decided to charge a registration fee of \$2.00 and to devote any surplus resulting from collection of such registration fee to defray the traveling and incidental expenses of the Research Associate—Dr. Scott Ewing—who will remove for examination the test specimens of coated pipe buried in fourteen different locations throughout the country. In this connection a definite announcement will be made next month in regard to making available the experience and advice of Dr. Ewing to companies desiring such service in connection with his necessary trips to the various burial sites of the pipe specimens.

Six Distribution Dinner Conferences Planned



AN outstanding feature of the Distribution Conference this year will be a series of dinner meetings to be held in lieu of the evening session originally planned for Friday, May 3. Full details in regard to these dinner conferences will be communicated to the members of the Section by mail well in advance of the Conference.

It has been tentatively decided to have six of these dinner conferences proceeding simultaneously, and the following general subjects were tentatively selected:

Pipe, including all problems relating to mains and services.
Meters.

Customers' Servicing and Appliance Installation.

Change-over from Manufactured to Natural Gas.

Safety Practices.

General

The proposed dinner conferences are not only to take the place of a general evening meeting as originally planned, but are substituted for the Open Forums formerly held at the larger Conference sessions. Special care is being taken to provide an opportunity for the full exchange of ideas on debatable subjects.

It is believed that this substitute for the former Open Forum will have the following advantages:

Eliminate the formality of a crowded Conference session.

Provide absolute freedom for the expression of viewpoints.

Each delegate may attend the particular dinner conference where topics of direct interest to him will be discussed. An opportunity is furnished to meet and become better acquainted with fellow members.

It is planned to have a discussion leader at each of the dinner conferences who

Joint Production and Chemical Conference

The Program Committee for the Joint Production and Chemical Conference to be held at the Hotel New Yorker, New York, May 13-15, definitely decided on February 21 to plan a three-day Conference, rather than a two-day Conference as heretofore, and to arrange to reduce the time of all afternoon sessions so as to adjourn at 4:00 p.m.

While it is not possible at this time to print a definite program for the Conference, the following statements prepared by the Chairman of the Chemical Committee, and the Chairman of the Gas Production Committee, indicate that the subjects to be presented will maintain the very high standard set by previous Conference program committees.

SUBJECTS TO BE PRESENTED UNDER THE AUSPICES OF THE CHEMICAL COMMITTEE

S. S. TOMKINS, *Chairman, Consolidated Gas Co. of New York, New York, N. Y.*

Arrangements have been completed for several interesting and timely chemical papers and reports by well-known men in the industry for presentation at the Conference May 13-14-15. The following brief summary indicates the nature of the material thus far available:

Prof. C. C. Furnas and Dr. R. H. Newton of the Yale University Department of Chemical Engineering will jointly present a paper on the operation characteristics of a liquid purification plant for sulphur removal. The data have been accumulated during an extensive test of a commercial size liquid purification plant and will include a material and heat balance of the plant and information on coefficients of ab-

sorption which might be useful in tower design. In addition, the paper will contain the results of a laboratory study of the solubility limits of the salts in the system when sodium carbonate is used and when potassium salts are used.

Prof. W. J. Huff and Dr. Lloyd Logan of the Johns Hopkins University Gas Engineering Department will discuss some new developments in gas analysis apparatus which have proven useful in their work. The subject matter relates to an electro-magnetically operated pipette which eliminates the tedium of analysis and shortens the time of certain absorptions, and a simplified apparatus for handling 10 cc. samples which is very economical to operate.

There will be two papers relating to the gum problem. Dr. A. R. Powell, Koppers Construction Company, will present the results of a study covering the removal of liquid-phase gum-formers and naphthalene from gas by oil scrubbing and W. H. Fulweiler, The United Gas Improvement Company, will offer a paper summarizing his work on the development of analytical methods for the determination of nitric oxide in gas.

J. M. Gonder, Koppers Coal Company, will give a paper on the Barrett type furnace for determining the fusion temperature of coal and coke ash. This furnace is said to have many advantages over the gas melter's furnace and the Denver Fire Clay furnace and has been rather widely accepted by industry.

E. F. Pohlmann and M. F. Kleeberg, The Peoples Gas Light and Coke Company, will discuss the maintenance, inspection and testing of Thomas Recording Calorimeters. The authors plan to cover this subject from

the standpoints of the requirements of large and small companies and to review the practices followed by several manufactured gas and natural gas companies.

H. W. Alrich, Chairman of the Association's Committee on Purging Procedures, will summarize the progress that has been made in preparing a procedure for purging gas mains and works equipment other than gas holders.

Dry box purification and the control of alkalinity will be covered in a paper by E. J. Murphy, The Brooklyn Union Gas Company.

L. Shnidman will present an abstract paper on the rôle of sulphur in gas and the properties of the products of combustion as regards condensation and corrosion, indicating the work that has been done and the work that is in progress.

Finally, L. F. Van der Pyl, Pittsburgh Equitable Meter Company, will review the results of study he is making on meter diaphragm changes in service, with particular reference to the effect of humidity.

There will also be the customary Open Forum, at which opportunity will be afforded for the discussion of miscellaneous subjects from the floor.

SUBJECTS TO BE PRESENTED UNDER THE AUSPICES OF THE GAS PRODUCTION COMMITTEE

K. B. NAGLER, *Chairman, The Peoples Gas Light & Coke Co., Chicago*

While a large list of suggested activities are available for discussion in the field of gas production, it has seemed from an analysis to date that the work of the Committee would be largely concerned with:

The problem in the Middle West of proper utilization of present gas production equipment where mixed gas is being distributed.

The problem presented throughout the



1934 Joint Production and Chemical Conference in session at New York

country of greater peak load capacity, due to increasing send-outs which involves further study of possible development of inexpensive peak load production capacity.

Problems in the Eastern territory induced by the use of heavy oils.

In securing discussion of the above problems at the Production and Chemical Conference, the Subcommittee on Water Gas under the chairmanship of W. K. Beard, of The Philadelphia Gas Works Company, have agreed, in addition to the progress report of their committee activities, to secure three presentations forming more or less of a Symposium on the production of high B.t.u. gas. Papers in this Symposium proposed to date include:

Pacific Coast Practice—by L. J. Willien, Operating Gas Engineer of the Byllesby Engineering and Management Corp., Chicago.

Heavy Oil Tar Handling and Emulsion Treatment—by F. B. Parke, Supt., Citizens Works, The Brooklyn Union Gas Company, Brooklyn; and P. T. Dashiell, or substitute author, The Philadelphia Gas Works Co., Philadelphia.

Butane Stand-by Equipment—by E. L. Fischer, Gas Engr., United Light & Power Co., Davenport, Iowa.

In addition, the Water Gas Subcommittee will secure a paper on lamp black difficulties when reforming natural gas, by H. B. Young of the Chicago By-Product Coke Company, Chicago. While this paper is on a specific subject, it is planned to include therein all pertinent data on gas reforming in other situations.

A. B. Huyck, of The Brooklyn Union Gas Company, Chairman of the Carbonization and Coke Subcommittee, is planning to secure presentations on the following subjects:

Coal expansion tests at Everett, Mass.—by V. J. Altieri, New England Fuel and Transportation Co., Everett, Mass.

Breeze screening—by M. F. Herreid, Connecticut Coke Co., New Haven, Conn.

Coke Oven Safety Practice—by E. W. Zimmerman, New England Fuel & Transportation Co., Everett, Mass.

In addition to the progress report from the Committee as a whole, it is also hoped to secure a paper that would bring the industry up-to-date on producer operation.

Bonuses for Gas Works Boys

THE gas works used to be a kind of social grade-mark. Beyond it were the railroad tracks, and beyond the tracks lived what social workers of today euphemistically call the under-privileged.

And look at the gas works now! Thanks to merchandising, it's a glistening business enterprise. Its gang—if gang is not a word too impolite—is a crew of spruce and sprightly young salesmen, quick stepping for sales in the modern tempo.

Witnesseth The Philadelphia Gas Works Company whose salesmen are asking their refrigerator customers, brightly:

"What aroused your interest in Electrolux: Newspaper advertisements? Broad-sides? Folders? Bill enclosures? Home demonstrations? Conversations with friends? Other influences?"

The answers go to the Electrolux advertising department, there to serve as whetstones upon which the appeals of advertising can be sharpened.

To stimulate deeper and more persistent delving for facts, Electrolux pays, each month, a bonus of \$10 to the salesman whose reports of customer reactions is most accurate, most detailed, and most systematic.—Printers' Ink, Feb. 28.

Gas Exhibit at Club Managers' Convention

THE Club Managers' Association of America held their annual convention and educational exhibit at the Netherland Plaza Hotel in Cincinnati, Ohio, March 4-7.

The American Gas Association occupied a very conspicuous booth which was so located that it attracted the attention of delegates passing through the exhibit hall. Thus club managers became further acquainted with the new type of ranges, as one unit of Garland hotel range and one unit of Vulcan hotel range were displayed. Representatives in attendance at the booth included the hotel and restaurant personnel of the Union Gas and Electric Company of Cincinnati and the district sales agents of the above range companies.

The American Gas Association was officially represented by the chairman of the Hotel and Restaurant Committee, T. J. Gallagher of The Peoples Gas Light and Coke Company of Chicago, Illinois. While Mr. Gallagher was not listed on the program as a speaker, he was afforded a cordial welcome and was called upon for a few comments. His response was as follows:

"The American Gas Association appreciates the privilege of representation here today. We sincerely hope that the cooperative and friendly spirit manifested between our associations will continue to exist and grow. I know that every club manager is interested in the economical operation of his kitchen and that you will agree with me when I say that the gas industry is also interested in economical operation. Gas companies cannot be held responsible for any existing high gas operating costs when you continue to use obsolete, inefficient appliances. Many of your present-day club kitchens have wasteful appliances still in use. It is the desire of the gas industry that all handmade and unscientific units be discarded and replaced with

modern, insulated, thermostatically controlled and economical appliances.

"Our Association, collaborating with prominent gas appliance manufacturers, has spent considerable time and money in research work to produce appliances which give more satisfactory performance and reduce operating costs. If you will spend just a few moments before leaving this convention and visit our booth you will find two units which are the result of this most intensive research work. If you happen to be the user of "handmade" gas units in your kitchen, then the installation of these newly developed ranges will be the answer to your wishes to reduce your costs of operation and incidentally obtain a greater uniformity and quality in your finished food output.

"May I urge you, therefore, at this time, to make either a written or mental memorandum to contact your local gas company on your return to your home city and ask them to make a survey of your kitchen to determine the savings that can be made with the installation of modern gas appliances.

"I also want to stress the point that it is not necessary to purchase these gas appliances from your local gas company because all leading equipment dealers are recommending and merchandising the new improved gas units. Most dealers are cooperating and have discontinued manufacturing handmade gas appliances. They are convinced that the gas industry wants their users to avail themselves of the most economical appliances possible.

"Please be assured that the gas industry wants satisfied customers, wants to satisfy and serve you to the best of its ability."

New Industrial Bibliography

A SELECTED listing of industrial gas articles has been compiled by the Industrial Gas Section under the heading Service Letter No. 20, Industrial Bibliography. The listing includes nearly 700 articles which contain data and information which should prove helpful in meeting competition, designing new industrial gas installations, improving and modifying existing equipment to reduce operating costs or improve products, and in solving other problems.

Copies of the bibliography have been supplied to gas company members and to members of the Industrial Gas Section of the American Gas Association. Additional copies are available at the following prices: 1 to 5 copies, 25 cents each; all over five copies, 10 cents each.

TESTING LABORATORY

R. M. CONNER, Director

Managing Committee: J. S. DeHART, Jr., Chairman

N. T. SELLMAN, Secretary

Comparative Effects of Utensil Variations on Gas and Electric Range Top Unit Efficiency

By F. O. SUFFRON

Research Engineer, A. G. A. Testing Laboratory

IT is generally recognized that every precaution must be exercised in the usage of electric ranges to prevent their operating costs from being excessive. Substantiation of this statement may be found in the activities of certain electrical and allied interests who are aggressively promoting the sale of special utensils with which electric top elements may be more efficiently utilized than would be possible with ordinary utensils generally possessed by consumers. These endeavors are commendable, even if the actual economies effected fall below expectations.

However, it has been intimated from time to time that the gas industry has not been active in this direction, the implication being that our industry encourages the wasteful use of gas. To one familiar

played. The gas ranges were equipped with regular burners having a 9,000 B.t.u. per hour input rating, whereas the electric ranges were provided with open and tubular type elements having input ratings varying from 1.0 to 2.0 kilowatt hours (3,413 to 6,826 B.t.u. per hour).

Descriptions of the nine utensils employed are given in Table 1. All of these vessels were provided with covers and were constructed with straight sides, the radius of curvature between the vertical sides and bottom being small in all

top elements were turned to the "high" position, while tests on gas range top burners were made at their normal rating of 9,000 B.t.u. per hour. At least one check test was made in each case.

Tests were conducted in accordance with the schedule shown in Table 2.

The principal data secured from the numerous efficiency tests are presented graphically in Figure 1. Each point thereon represents the average efficiency for all ranges of each type under the particular test condition. The highest average efficiency for electric ranges was found during test E, for which a black bottom utensil (see Table 2) was employed. The actual difference between this maximum and the average efficiency for all electric ranges yielded by each of

TABLE 1
DESCRIPTION OF UTENSILS EMPLOYED

No.	Catalog No.*	Material	Outside Diameter Inches	Outside Height Inches	Outside Finish		Inside Finish	Color
					Bottom	Sides		
1	2004	Rolled Aluminum	7 $\frac{3}{8}$	5 $\frac{5}{8}$	Rough	Polished	Dull	—
2	362	Rolled Aluminum	7 $\frac{3}{8}$	5 $\frac{5}{8}$	Dull	Dull	Dull	—
3	362	Rolled Aluminum	7 $\frac{3}{8}$	5 $\frac{5}{8}$	Dull	Polished	Dull	—
4	362	Rolled Aluminum	7 $\frac{3}{8}$	5 $\frac{5}{8}$	Dull	Dull	Dull	Red Bottom
5	362	Rolled Aluminum	7 $\frac{3}{8}$	5 $\frac{5}{8}$	Dull	Dull	Dull	Black Bottom
6	802	Rolled Aluminum	7 $\frac{3}{8}$	3	Dull	Dull	Dull	—
7	363-A	Rolled Aluminum	8 $\frac{1}{8}$	5 $\frac{5}{8}$	Dull	Dull	Dull	—
8	364-A	Rolled Aluminum	9	5 $\frac{5}{8}$	Dull	Dull	Dull	—
9	—	Enameled Iron	7 $\frac{3}{4}$	6 $\frac{1}{8}$	Smooth	Smooth	Smooth	White

*Numbers from "Wearever" Catalog, Aluminum Company of America.

with the unceasing research conducted by the industry leading to the development of more efficient equipment as well as of the constant improvements in service made by utilities, such an inference would obviously be false. Furthermore, only a superficial knowledge of the fundamental principles of heat transfer is needed to demonstrate that utensils exert comparatively little effect on the efficiency and thus the economy of gas range top burners.

Test Equipment Used

Inasmuch as there was available no authoritative data on the comparative effect of variations in utensils on gas and electric range efficiency, the American Gas Association Testing Laboratory was requested to conduct an appropriate investigation of this problem. For this study, open top gas ranges and electric ranges of modern construction were em-

ployed. The red coating on the bottom of utensil No. 4 was secured by painting it with transparent lacquer containing ferric oxide as a pigment. The black coating on the bottom of utensil No. 5 was similarly applied using manganese dioxide as a pigment.

The efficiency tests were conducted substantially in accordance with the method prescribed in the American Standard Approval Requirements for Gas Ranges Z21.1-1933, a "hot" start being utilized in all tests. The switches of the electric

the other test conditions is also shown. A similar treatment is accorded the test data obtained from the gas ranges, all average efficiencies for the various test conditions being expressed as their actual deviation below the highest average efficiency as found under test I.

Gas Maintains Uniform Efficiency

This manner of presentation readily illustrates the uniformity of gas range top burner efficiency under variable test conditions in direct contrast to the extreme

TABLE 2
SCHEDULE OF TESTS

Test Designation	A	B	C	D	E	F	G	H	I	J
Utensil Number (See Table 1)	1	2	3	4	5	6	2	7	8	9
Pounds Water	5	5	5	5	5	3	3	5	5	5

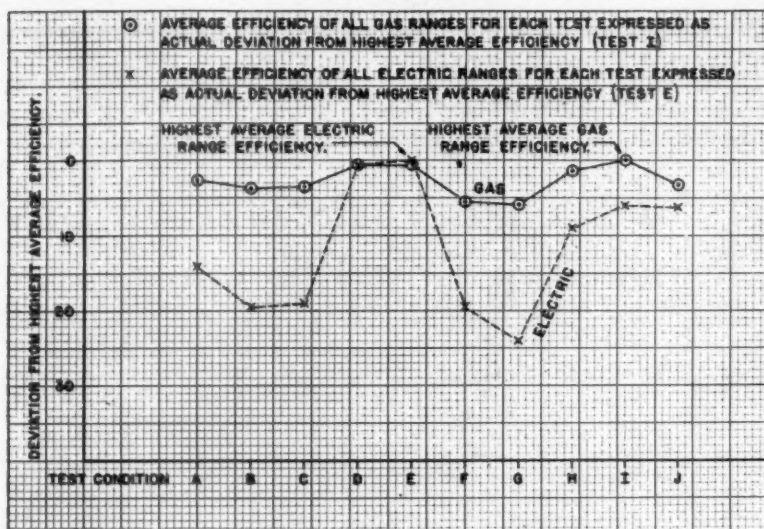


Figure 1—Effect of variations in utensils on the thermal efficiencies of gas and electric top elements

fluctuations in the efficiency of electric range top elements. Moreover, it permits comparisons to be made of the effect of any one isolated variable on the top unit efficiency of gas and electric ranges. For example, use of utensil No. 2 with three pounds of water (test G) instead of the same utensil with a black coated bottom and five pounds of water (test E) caused an average decrease in efficiency of 24 per cent. Under these two test conditions the actual average gas range top burner efficiencies differed only by 5 per cent.

The directions incorporated in Table 3 will conveniently permit detailed analyses to be made of the curves in Figure 1.

Inasmuch as the average data plotted in Figure 1 do not, in themselves, conclusively demonstrate that the apparent trends indicated are generally applicable, further analyses of the results were made in an endeavor to ascertain whether such was the case. Consequently, the maximum efficiency difference observed for each range was found as graphically depicted in Figure 2. It may readily be seen that the efficiency variations produced by extreme test conditions ranged only from 4.2 to 9.6 per cent for the gas ranges and from 23.1 to 26.7 per cent for the electric ranges. This is especially noteworthy, since it shows that variation in utensils affect each type of range to practically the same extent, regardless of differences embodied in the design and construction of individual models. The data apparently possess, therefore, general significance.

Practically all findings made during this investigation were in accordance with the theoretical concepts of the heat transfer conditions generally prevailing with gas and electric ranges. Transfer of heat from electric top elements of the open type is usually accomplished almost

entirely by radiation, conduction being a minor factor, and convection being practically non-existent. Exceptions to this generality may be found. For example, the heat transfer from a tubular unit at the beginning of a heating cycle may be almost entirely by conduction, but as the unit continues to heat the coils become incandescent so that transfer by radiation again becomes an important factor.

The total heat transfer to utensils from gas range top burners is effected chiefly by means of convection through the me-

dium of hot flue gases. However, conduction of heat from grate bars as well as radiation from the incandescent portions of the burner flames are also factors. Solid top gas ranges, if utilized with the solid lids in place, transmit heat to utensils largely by conduction. Generally, solid top gas ranges are provided with open grates or are otherwise so designed that they may be operated in such a manner that heat transfer conditions are similar to those prevailing with open top ranges.

Special Utensils for Electric Ranges

In view of the data presented and the above-mentioned theoretical considerations, it is apparent that the bottoms of utensils to be used on electric range top elements must possess a high coefficient of absorptivity if the maximum efficiency is to be approached in cooking operations. Furthermore, the side walls should possess a low coefficient of absorptivity (emissivity) so that the heat radiated from them will be held to a minimum. It is also essential in order to insure optimum conditions for electric ranges, that the diameter of utensils be almost identical with that of the top elements. Otherwise, much of the heat from the element will be radiated to surrounding objects rather than to the utensils. Diameters and heights of utensils must, furthermore, be held to a minimum so as to reduce radiation losses from them. Where conduction is an important factor of heat transfer from an electric top element, such as when solid units are employed, utensils must in addition to the above prerequisites, make close con-

TABLE 3
ANALYSIS OF RESULTS

Comparison Desired	Revealed by Tests
Exterior finish on utensil bottom	A (rough) and B (dull)
Exterior finish on utensil sides	B (dull) and C (polished)
Color of utensil bottom	B (natural), D (red) and E (black)
Height of utensil	F (3") and G (5½")
Diameter of utensil	B (7½"), H (8½") and I (9")
Amount of water	B (5 lbs.) and G (3 lbs.)
Material	A, B, C (aluminum) and J (enamelware)

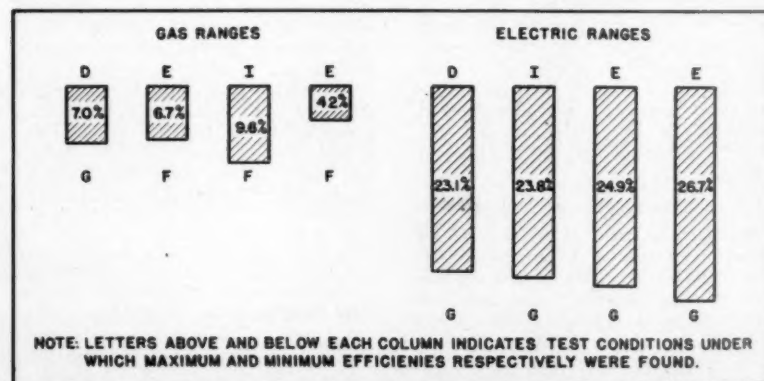


Figure 2—Difference between maximum and minimum efficiencies of each range

tact with the surface of the unit. It may be stated, therefore, that utensils for use on electric range top elements should possess very special characteristics, if the ultimate efficiency is to be gained.

Such is not the case with gas range top burners, primarily because the entire outer surface of the utensils is exposed to hot flue gases. If, for example, the bottom of a utensil is a poor absorber of radiant energy, the transfer of heat to the utensil by the "scrubbing" action of the hot combustion products will remain unimpaired. Any characteristic of a utensil tending to increase radiation losses from the utensil such as increased height, diameter, and coefficient of emissivity, is compensated for to a large extent by virtue of the hot flue gases enveloping the utensil. Variations in utensils which influence radiation or conduction of heat to them are relatively unimportant, since the portion of total heat transmitted to a utensil by these factors is, as previously stated, of a minor or even negligible magnitude.

Conclusions

Results secured during the investigation in conjunction with theoretical considerations, warrant enunciation of several irrefutable conclusions, the substance of which, if disseminated to the public, should serve in eradicating any false impressions that have been created in regard to this problem. The first is that efficiencies of gas ranges, for all practical purposes, may be considered as being independent of utensil variations such as bottom contour, absorptivity coefficient, and reasonable differences in height and diameter. Thus, a consumer may utilize whatever utensils are available for gas range top burner cooking, and be assured that the maximum economy which this type of appliance affords under any particular condition of usage is being closely approached. It follows, therefore, that the expense of procuring special utensils for gas range top burner cooking would in most cases not be justified.

Conversely, in order that the maximum efficiency may be approached with electric range top elements, it is essential that special utensils be utilized. Many electrical interests, recognizing the unfavorable reactions resulting from excessive operating costs which generally accompany use of older utensils, have vigorously promoted the sale of new and costly kitchen equipment. These activities are fully justified as brought out by the results obtained from the above-mentioned study. However, attempting to minimize the expenditures required for the special utensils by stating that the gas range interests should similarly encourage procurement of new utensils and inferring that the gas industry would do so if it had the best interests of the consumer in mind, is not warranted. A consumer should, therefore, be made fully aware that the expenditures necessary for

special utensils should be added to the initial cost of an electric range, if a true comparison between the outlay required for gas and electric ranges is to be had. Furthermore, the cost of periodically replacing such special and more costly utensils coupled with the fact that routine cooking operations do not always lend themselves to the use of particular sizes and shapes of utensils, regardless of their effects on efficiency, will indicate the advantage of gas ranges in this respect.

A significant aspect of this entire problem, which has previously escaped direct comment, is that procurement of special utensils is, in itself, no assurance that they will be utilized for all surface cooking operations. This is especially true in the case of utensil diameter. A given utensil may be ideal for one size of top element, and yet yield a low efficiency on a larger or smaller element. Consumers often utilize special utensils in a manner

dictated by the cooking operation involved, or by time requirements rather than in a manner to secure optimum efficiency conditions. In such common cases special utensils give little return on the investment entailed.

It is recognized that this one phase of the comparative cost of cooking by gas and electric ranges is of much less importance than other items, such as initial and maintenance costs of the ranges themselves, as well as over-all operating costs. Yet it constitutes a fundamental and indisputable point of distinction between the two types of appliances, and as such is valuable. The American Gas Association has recently completed at its Testing Laboratory in Cleveland a comprehensive study of the important aspects of cooking by gas and electricity. The report covering this work is now being prepared and should be available for distribution to the industry in the near future.

A. G. A. Listing Requirements for Accessories Become American Standards

IT is gratifying to report that six additional sets of listing requirements have been approved as American Standards by the American Standards Association. This brings the number of A. G. A. requirements which have received such recognition to a total of 23. The latest requirements to be approved as American Standards are listed below.

1935. Approved February 11, 1935.

1. American Standard Listing Requirements for Domestic Gas Appliance Pressure Regulators, Z21.18-1934. Approved as American Standard December 26, 1934.
2. American Standard Listing Requirements for Automatic Devices Designed to Prevent Escape of Unburned Gas, Z21.20-1935. Approved as American Standard February 11, 1935.
3. American Standard Listing Requirements for Automatic Main Gas Control Valves, Z21.21-1935. Approved as American Standard February 11, 1935.
4. American Standard Listing Requirements for Relief and Automatic Gas Shut-Off Valves for Use on Water Heating Systems, Z21.22-1935. Approved as American Standard February 11, 1935.
5. American Standard Listing Requirements for Water Heater, Gas Range, and Space Heater Thermostats, Z21.23-1935. Approved February 11, 1935.
6. American Standard Listing Requirements for Semi-Rigid Gas Appliance Tubing and Fittings, Z21.24-

1935. All A. G. A. approval, listing and installation standards have now been approved by the American Standards Association with the exception of the Approval Requirements for Gas Refrigerators, A. G. A. Requirements for Official Marking of Approved Gas Appliances, Appurtenances and Listed Accessories, and the A. G. A. Requirements for House Piping and Appliance Installation.

The first of these has been pending approval before the American Standards Association for some time and it is expected that this approval will shortly be granted. The second set of standards mentioned are outside of the scope of the work of the American Standards Association as they apply only to our Approval Seal and Listing Symbol. It is expected that the requirements for house piping and appliance installation will be revised within the next year and submitted to the American Standards Association for approval.

The cooperation that our Association has received from the American Standards Association has been most gratifying and the fact that practically all of our requirements have been given recognition by the highest standardization body in this country, or in fact in the world, is not only a compliment to the good work of our committees, but a well-earned tribute to their ability, integrity, and tireless effort. The six sets of standards listed above were recently printed in final form and are being distributed to all interested member companies of the Association as well as to

governmental agencies and other organizations concerned.

The Laboratory is now in position to proceed with the testing and certification of various types of accessories in accordance with the standards previously listed.

Information regarding test procedures, etc., should be addressed to R. M. Conner, director of the American Gas Association's Testing Laboratory, 1032 East 62nd St., Cleveland, Ohio.

Requirements Committee Activities

REVISED approval requirements for gas water heaters were recently completed by committees of the Association and submitted to the American Standards Association for final approval as American Standards.

The revised requirements are much more comprehensive than the ones effective July 1, 1934, and which are now in effect. The new standards include detailed construction and performance requirements for all types of accessories in line with the various listing requirements for gas burner valves, draft hoods, thermostats, relief and automatic gas shut-off valves, thermostatic pilots, gas pressure regulators, etc. Printed copies of the latest revised requirements will not be available until after approval by the American Standards Association. Those interested in the latest requirements, however, may secure mimeographed copies by writing to the Testing Laboratory in Cleveland.

At the February meeting of the Subcommittee on Approval Requirements for Gas Ranges, the revised range Standards were completed for submission to, and final approval by, the A.S.A. Sectional Committee, Project Z21, A.G.A. Approval Requirements Committee. A meeting of this committee has been tentatively scheduled to be held at the Testing Laboratory in Cleveland on April 19 and 20.

Important changes in the burner valve requirements setting up minimum dimensions for barrel diameters of gas cocks were adopted by the Subcommittee on Listing Requirements for Gas Burner Valves at a meeting in Cleveland on February 13. These requirements, which will be passed upon by the Sectional Committee at its April meeting, specify a minimum barrel diameter of 0.464 inch for 1/8-inch gas cocks, and a minimum barrel diameter of 0.620 inch for 1/4-inch or larger gas cocks. The minimum diameter of the barrel shall be measured through the axis of the cross bore and perpendicular to the axis of the plug. While these dimensions are in line with generally accepted practice, it is recommended that valve manufacturers give careful consideration to this point.

In view of the importance of the gas range to the industry, and the impossibility for all members of committees to always attend every meeting, it was felt desirable to expand the personnel of the range subcommittee to include two addi-

tional members. The new members added to this group are A. M. Apmann, new business manager of the Derby Gas & Electric Co., Derby, Conn., and A. D. Walden, general manager of the Hardwick Stove Co., Cleveland, Tenn.

: Additions to the Family :

FEBRUARY 15—MARCH 15, 1935

HOLDING COMPANY

Delegates

Southern Union Gas Company of Delaware, Dallas, Texas.....C. H. Zachry

GAS COMPANIES

Durango Natural Gas Company, Durango, Colo.....H. Doty
LeFlore County Gas and Electric Company, Poteau, Okla.....R. F. Orr
Albuquerque Natural Gas Company, Santa Fe, New Mexico.....J. R. Cole
Consumers Natural Gas Company, Artesia, New Mexico.....C. M. Walters
Gas Company of New Mexico, The, Clovis, New Mexico.....H. Cole
Lovington Gas Water & Sewer Company, Lovington, New Mexico.....
Mesa Grande Gas Company, Santa Fe, New Mexico.....J. C. Byrd
Pecos Valley Gas Company, Artesia, New Mexico.....J. H. Wilson
Southern Union Production Company, Albuquerque, New Mexico.....Van Thompson
Kingfisher County Gas Company, Kingfisher, Okla.....A. C. Black
M. and M. Pipe Line Company, Belleville, Texas.....H. C. Frizzell
Southern Union Gas Company of Texas, Dallas, Texas.....W. Cain
Union Finance and Sales Company, Dallas, Texas.....F. D. Bradley
Wink Gas Company, Pecos, Texas.....H. Beauchamp

MANUFACTURER COMPANIES

Gas Equipment Corporation, Linden, N. J.....J. C. Fullerton
Safe-Way Incinerator Company, Los Angeles, Calif.....Ralph DuBose

INDIVIDUAL MEMBERS

Andersen, Chris S.....Pennsylvania Furnace & Iron Company, Warren, Pa.
Baxter, L. L.....Arkansas Western Gas Company, Fayetteville, Ark.
Bennett, William M.....Elizabethtown Consolidated Gas Company, Elizabeth, N. J.
Beauchamp, Harvey.....Southern Union Gas Company, Pecos, Texas
Borland, John.....26 Gramercy Park, New York, N. Y.
Bradley, F. D.....Southern Union Gas Company, Dallas, Texas
Cain, Woodford.....Southern Union Gas Company, Dallas, Texas
Cole, J. R.....Gas Company of New Mexico, Clovis, New Mexico
Cressler, George H.....Stacey Manufacturing Company, Cincinnati, Ohio
Frizzell, H. C.....Southern Union Gas Company, Dallas, Texas
Little, Jack M.....Detroit-Michigan Stove Company, Detroit, Mich.
Maullar, Frank B.....Ohio Gas & Oil Men's Ass'n, The, Columbus, Ohio
Mayo, Leo Archer.....Connecticut Light & Power Company, The Hartford, Conn.
Redford, Percy Stewart.....Ketterlinus Litho. Mfg. Company, New York, N. Y.
Reid, Walter.....Southern Union Gas Company, Dallas, Texas
Robertson, Lewis A.....Zenith Gas System, Inc., Woodward, Okla.
Rosen, Benjamin.....Boston Consolidated Gas Company, Boston, Mass.
Wilson, J. H.....Pecos Valley Gas Company, Artesia, New Mexico
Wray, Cheves L.....Consolidated Gas Company, New York, N. Y.
Zachry, C. H.....Southern Union Gas Company, Dallas, Texas

CANADA

McLean, N. D.....Lloydminster Gas Company, Lloydminster, Saskatchewan, Canada

ENGLAND

Reynolds, Thomas.....Stockport Corporation Gas Department, Stockport, England

GERMANY

Zur Neoden, Franz...Deutscher Verein von Gas und Wasserfachmannern, Berlin, Germany

Appliance and Equipment Developments

Roper's 50th Anniversary Sales Plan

Tying in closely with the National Gas Range Contest, the Geo. D. Roper Corp., Rockford, Ill., has announced a new gas range designed as an advertising leader for volume sales, and a complete, comprehensive selling plan.

Bound in a gold-covered portfolio, the new Roper plan offers a complete service to its customers, including many new advertising helps not generally available from a manufacturer. Two newspaper ad series, one for sales purposes and the other stressing the advantages of gas as a fuel, consumer literature, display signs, racks, cards and backgrounds, Baby Roper banks, suggested consumer copy for letters and radio, sales manuals, miscellaneous books to provide sales ammunition, sales talks, sales skits, even lift trucks are included in this new and attractively arranged book.

In addition, Roper is promoting two special contests for salesmen and display managers, separate from the National Contest. Prizes will be awarded every month for the best "Talk-of-the-Month," while the best displays built around the 50th Anniversary theme will also be awarded cash prizes at the end of a six months' period.

Gas Control Valve

The Welsbach Laboratories have developed a new device for customer control of gas supply to gas storage water heaters.

The function of this valve—called E-Z Trol—is the optional changing of burner capacity. By turning the handle to any one of three different positions the capacity can be made that which is normal to the burner, intermediate or low, the last two being predetermined.

A substantial saving in gas can be obtained by operating the control at the medium or low positions, according to the manufacturer.

New Type Burner

Glowite Combustion Company, Grants Pass, Oregon, has announced a new type burner based on catalysis at high temperatures. The catalyst used is copper oxide coating on natural diatomaceous earth cubes. According to the manufacturer the heater gives a soft, distributed radiation instead of a hot spot and glaring heat. It is made of furniture steel, carborundum hearth and chromium plating. The hourly input rating is 55,000 B.t.u., manufactured gas, and 34,000 B.t.u., natural gas.

Contributions of news items by manufacturers of gas appliances and equipment to this department will be welcomed by the A. G. A. MONTHLY. On account of space limitations, all announcements of new products, improvements, etc., should be limited to about 100 words. No attempt will be made to give details of construction. For such details address the manufacturer direct. All contributions to this department should be addressed to C. W. Berghorn, Secretary, Manufacturers' Section, American Gas Association, 420 Lexington Ave., New York, N. Y.

Welding Film

The Linde Air Products Company, 30 East 42nd St., New York City, announces that a new motion picture is now available for industrial and school showings. The film is entitled "The Multi-Flame Lindewelding Head," and provides a graphic description of the usefulness of the Linde method of pipe line welding.

New Range

American Stove Company, in its new Magic Chef Series 1400, has introduced ranges with a framework of tubular chrome finished steel. In appearance, the new series represents a considerable departure from other models. The tubular feet raise the supporting frame off the floor, preventing dust collection. It has a divided cooking top, new type grate, sanitary high burner tray, automatic top lighter for each section of cooking tops, and other features.

Burner Catalog

The Barber Gas Burner Company, 3702 Superior Avenue, Cleveland, Ohio, recently issued a new thirty-four page catalog describing Barber burners and other equipment. The catalog, No. 35, is complete with illustrations, specification tables, list prices, and other data calculated to be of interest to manufacturers of heating appliances.

Fusion Furnace

The Burrell Technical Supply Company, Pittsburgh, Pa., has placed on the market a new Barrett Fusion Furnace and a new Burrell Optical Pyrometer. The furnace is especially designed for determining the fusing temperature of

coal-ash. Other uses include such operations as the determination of pyrometric cone equivalents of refractory materials, the study of test pieces of ceramic bodies, heat treating and other laboratory work requiring a high temperature gas furnace. The optical pyrometer is a direct reading instrument designed for use with the fusion furnace.

Backrun Valve

Semet-Solvay Engineering Corporation, 42 Rector St., New York City, has announced an improved 3-way Backrun Valve for use in water gas sets. Some of the improved features include: quick opening door, full height of box; dished welded steel discs; two large bearings always in alignment, both cooled by radiation; enlarged shaft strengthened against bending; and spray system which reduces carbon and tar accumulations when running heavy oil.

Peerless in Philadelphia

Peerless Manufacturing Corporation has announced the opening of a Philadelphia office under the management of The Lovekin Water Heater Company for the purpose of merchandising Peerless Hearth-Fyres in the Eastern territory. A stock and display of heaters will be carried at the Lovekin factory, 21-43 Laurel St., Philadelphia, Pa.

Heintzman Joins Meyer's

Cass J. Heintzman has recently joined The Meyer Furnace Company, Peoria, Illinois, in the capacity of assistant sales manager in the gas division.

Mr. Heintzman was formerly, for a year and a half, in charge of house heating and industrial sales and service for a considerable portion of territory served by the Central Illinois Public Service, with headquarters at Quincy. Previously, starting in 1928, he served as house heating engineer for Associated Gas and Electric, at Bloomington, Illinois, Sioux Falls, South Dakota and Ashtabula, Ohio.

Relief Valves

A technical bulletin describing Relief Valves is now being distributed by The Patrol Valve Company, Cleveland, Ohio. The bulletin explains how they operate and why they should be installed on hot water supply systems. Copies will be supplied on request to the Patrol company.

Personnel Service

SERVICES OFFERED

Industrial Gas Sales Representative (43). Adjusting, repairing, designing and selling appliances and burners to every industry. Manufacturer and gas utility experience, domestic and industrial. Married. 912.

Engineer, broad experience in production, distribution, accounting and management; analysis distribution systems and preparation immediate or future extensions; making and testifying to inventories and valuations in rate and tax cases. Qualified install continuous inventory. 913.

Salesman, electrical products (30), married graduate electrical trade school. Eight years' experience New York City selling electrical appliances, specialties and material to industrial, public utilities, chain and department stores, realty companies, banks, jobbers and retailers. Also experienced sales promotion and missionary work. 914.

Gas Engineer, 20 years' practical experience in all branches—manufactured and natural gas—holding company experience—highly successful in improving operating and distribution conditions. Recognized expert in federal court and commissions on appraisals and gas company operations. 917.

Graduate Engineer, eight years' experience Public Utility operation and financing. Operating experience all types manufactured, natural gas, electric, water, ice companies. Financial experience organization new and reorganization of old companies. 918.

Junior Statistician, 10 years' experience public utilities. Versed in statistical routine, special reports, unit costs, special studies, preparation of forms in reporting or summarizing balance sheet, operating revenue and operating expense items, graphical presentation of results, reports for trade associations, Federal Trade Commission, etc. 919.

Executive Manager (39). Technically trained university man; 15 years' experience available due consolidation of gas & electric properties. Broad experience, covering all phases of industry. Especial attention to Sales Promotion & Public Relations. 920.

Exceptional experience as Key Man to executives suggests there is a similar position where knowledge of controlling corporate, financial, and legal requirements of corporations or different states, together with security sales promotion, modern budgets and statistical interpretation has a place. Can fully substantiate above at interview. 921.

Personnel Director with deep convictions on value of public relations and employee's education, believing that a correctly informed public is a friendly public, that better trained employees insure stability and profits; all possible with low overhead. Have had ten years' experience in one of America's largest utilities. Good references. 922.

Accountant-Auditor, twenty years' diversified experience, home and abroad, on gas and oil, railways, foundries, sugar mills, general construction and bus transportation; five years last position handling consolidations, mergers and reorganization. Good personality, speaks and writes Spanish fluently. 923.

Salesman thoroughly seasoned in domestic and industrial appliances, with refrigeration a specialty, seek connection eastern or mid-west company. Fourteen years' experience all phases of appliance merchandizing—cold canvass, new business manager—advertising—cooking schools, married (38). 924.

Young (24) wide awake, conscientious and ambitious. Five years' experience in analysis of utility operations, including sales and promotional activities plus three years' university training in advertising. Should fit well in advertising department of operating company, holding company, or manufacturer advertising agency. Single. 925.

Salesman (35) 14 years' appliance experience with a background of both utility merchandising and manufacturer representative of ranges and space heater experience. Wishes to connect with reputable manufacturer to contact utility and dealer trade; well acquainted with Midwest. 926.

General Office Worker (37) principally pay roll preparation, auditing and paymaster with large industrial organizations. Now employed and studying accounting at university night course; seeks change. 927.

Executive engineer-accountant and commercial sales manager desires connection. Thorough experience with all branches of utility operation and new business promotion. Good public relations experience. Location no object. Thorough statistician—accountant. 928.

SERVICES OFFERED

Engineer-Secretary of gas and electric association in important progressive state. Has combined engineering, statistical and general organization and promotional work with appearances before committees, commissions and various types of audiences. Thoroughly familiar with state regulation and procedure, employee training, customer and trade relations work; available short notice. 929.

Sales-New Business manager: Extensive training, experience initiating, directing advertising, publicity, sales campaigns; developing costs, rates, selling prices; supervising salesmen, commercial, public relations; outstanding record as industrial gas and power engineer; resourcefulness and ability to meet and solve new problems. 930.

Engineer—Eleven years in gas industry. Familiar with manufacture and distribution large system, both high and low pressure. Experienced in making investigations and unusual test; have proficient understanding of burner design and combustion. 931.

Editor and Writer. Qualified for research, editorial work, writing, in business field. Have written correspondence courses and edited technical as well as general business material. Executive experience. 932.

Advertising Man (29) experienced in gas utility field. Competent advertising manager for smaller company or manufacturer or will fit well into a department. Copy writing, layout and publicity experience. Thorough knowledge of mechanics of production. Recommendation from previous employer. Record will stand closest scrutiny. Married. 934.

Sales Manager—sales promotion manager—salesman—competent, aggressive, experienced, for gas company or manufacturer wanting successful sales. Appliances, gas merchandise, gas distribution supplies, plumbing, heating specialties. Twelve years' effective selling, promoting, advertising, managing volume sales for leading specialty manufacturers. National gas company executive, jobber and consumer contacts. Mature college man. 935.

University graduate, woman (College of Architecture) desires position in kitchen planning or related work; course in architectural design completed June 1934. Sketches supplied upon request. 937.

Chemical Engineer, now employed; 10 years' thorough experience in carburetted water gas plants. Familiar with latest equipment and processes including heavy oil operation, tar dehydration and gum control. 938.

Mechanical Engineering Graduate (1934) desires position with engineering or manufacturing concern. Has ability to carry out instructions or use initiative as desired; realizes must earn a profit for his employer. 939.

Manager with long experience in handling properties having up to 3500 meters, desires change. Can furnish desired references. Now employed. Has operated natural gas property for past five years. 940.

Utilization and Sales Engineer; long experience New York metropolitan area and adjacent vicinity in house heating, industrial water heating and restaurant work; also testing and installation. Well acquainted with gas companies, commercial outlets, architects and others in district mentioned. Have worked for gas companies and manufacturer of gas appliances. 941.

Gas Engineer. College graduate, 23 years' experience both manufactured and natural gas, highest credentials, capable of taking complete charge, thoroughly proficient in installation of industrial and house heating equipment, long experience in sales, utilization and installation of domestic, industrial and commercial appliances, available on short notice, due to consolidation. 942.

Advertising, Publicity, Public Relations. Practical experience in all phases of these endeavors with large western gas and electric company and two outstanding railroads, covering many years; have conducted employees' magazine. 943.

Gas Engineer of broad experience in all branches—Supervising Engineer in Holding Company—successful in improving operating and distribution conditions—Inventories, appraisals, reports of examination, rate structures, budgets, organization, supervision. Recognized gas expert. 944.

SERVICES OFFERED

Sales Engineer desires employment; broad experience with Eastern Gas Utility. Friendly consumer relations of first importance. Specialized in sales, service and maintenance covering House Heating, Industrial Steam and Water Heating. Married. 945.

Experienced office executive, Sales Promoter, and salesman. Associated with leading manufacturers for over fifteen years. Contact with utility companies, building, dealer and retail trades. Desirous of locating with a progressive organization. Thoroughly experienced in all phases of office routine, supervision of help, appliance construction, selling and promotional work. 946.

Appliance Salesman. Experienced and capable salesman is considering new connection. Anything in the stove line, which includes supervision or managerial ability, or salesmanship is acceptable. 947.

Gas Engineer and operator with fifteen years' experience including manufacture, distribution, sales promotion and especially experienced and trained in the present necessary field of **Customer Relations and Service** desires to associate himself with a company needing an operator, local manager, a competent department head or a customer relations supervisor. 948.

Aggressive young man, engineering graduate, whose 10 years' sales and engineering experience includes house heating, winter air conditioning, and industrial gas, in manufacture and natural gas territories, wishes to make advantageous change. 949.

Industrial Sales Engineer. Experience gained with Eastern utility. College graduate. Member ASME. Qualified make surveys, design burners, piping and auxiliaries. Familiar with all principal metallurgical operations, ceramics baking, etc. Understands space heating and air conditioning. Age, experience, ability sufficient take charge territory or department. Outstanding sales ability. 950.

Manager—Fifteen years' practical experience in gas industry operating small properties, coal, water and butane gas. Familiar with high and low pressure and have made change over coal gas to water gas and water gas to butane. Am interested in small plants and know what it means to maintain friendly public relations. 951.

Industrial gas sales engineer (35) six years' experience large Eastern combination company. Broad experience in sales, installation and service of varied industrial appliances as: bake ovens, boilers, furnaces etc. Familiar with all competitive fuels, preparation of estimates and cost surveys, and economic rate determinations. University graduate, married. 952.

Engineering graduate with several years' varied experience in design, manufacture, erection and operation of gas plant equipment, and in the supervision of plant operation, desires supervisory or technical position with company producing blue or carburetted water gas alone or in connection with coal, refinery or natural gas. Married. Location immaterial. 953.

POSITIONS OPEN

Manufacturer of combination new radiant type broiler, griddle and toaster, launching national sales program, desires state representative with distributor dealer franchise ability. Prefer those who are now representing other similar lines, or with past successful sales experience. Here is a real item at a real price with a liberal sales commission. Please give complete information in your application. 0284.

An old, established concern having a complete line of gas fired boilers and furnaces desires high class representation in eastern, southern, and central territory. Will be interested if your lines are non-competitive. 0286.

Sales Representative or Distributor. A large middle west manufacturer of a complete line of gas-fired automatic water heaters desires representation in the Los Angeles and Southern California territory. Prefer those who are now representing other lines of gas appliances, also those who can properly service 4,000 units now in that territory. 0287.

Working Foreman for gas plant, send out about 100,000 per day. Must be able to make gas part of time and make own repairs. State salary expected and give references. Location, South Carolina. 0288.

Advisory Council

E. R. ACKER.....	Poughkeepsie, N. Y.	D. M. MACKIE.....	Jackson, Mich.
JAY BARNES.....	New Orleans, La.	F. A. MILLER.....	Bradford, Pa.
J. I. BLANCHFIELD.....	Brooklyn, N. Y.	W. F. MILLER.....	Chicago, Ill.
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H. C. COOPER.....	Pittsburgh, Pa.	I. K. PECK.....	Boston, Mass.
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